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SUPPLEMENTARY INFORMATION
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Self Assembling 2D and 3D Prestressed Tensegrity Structures built from DNA

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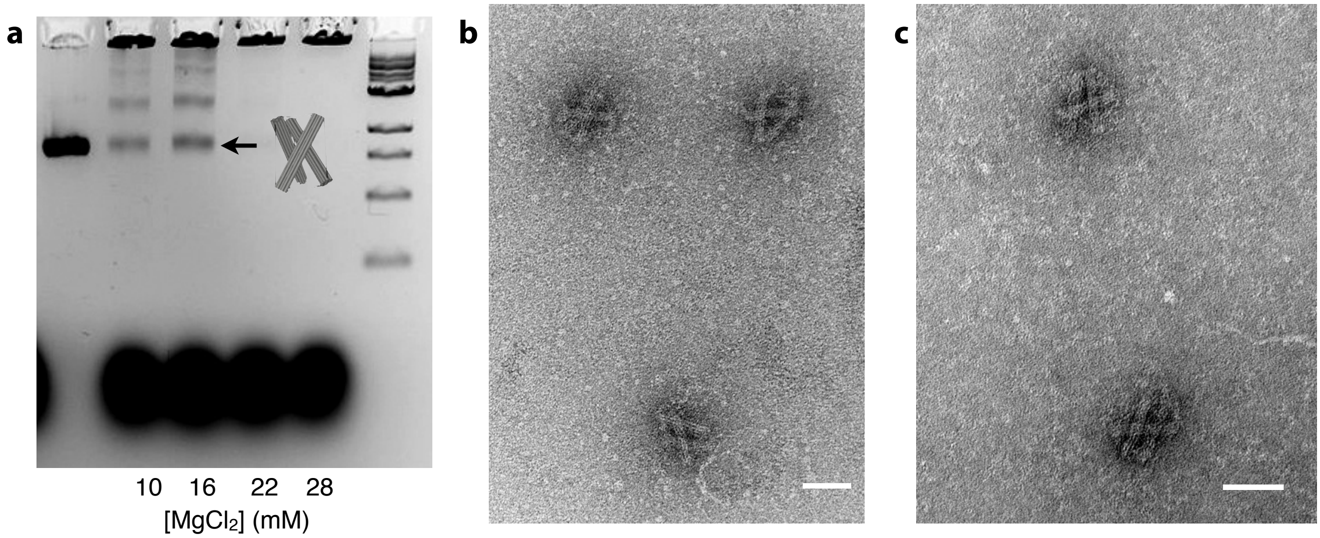

Figure S1 | Prestressed tensegrity object prism.

a) Agarose-gel analysis of the prism (2% agarose, 0.5 μg/mL EtBr, 0.5x TBE, 11 mM $MgCl_2$, 3 h at 70 V). Lanes from left to right: scaffold p8634, prism folded at 10 mM, 16 mM, 22 mM, and 28 mM concentration of $MgCl_2$, 1kb ladder. The fastest moving band in the 16 mM $MgCl_2$ lane was physically extracted from the gel and centrifuged through a spin column (Freeze 'N squeeze, Biorad, Hercules, CA) to filter out agarose residues.

For yield estimation, the fluorescence intensity of the leading band was compared to the fluorescence intensities of the whole lane, including the fluorescence from the gel pockets and the smear between the individual bands.

b) Gel-purified objects were adsorbed on plasma-treated, carbon-coated TEM grids for 2 minutes, stained with 2% uranyl formate, and then imaged on a FEI Tecnai T12 BioTWIN at 80 kV. Scale bars: 50 nm.

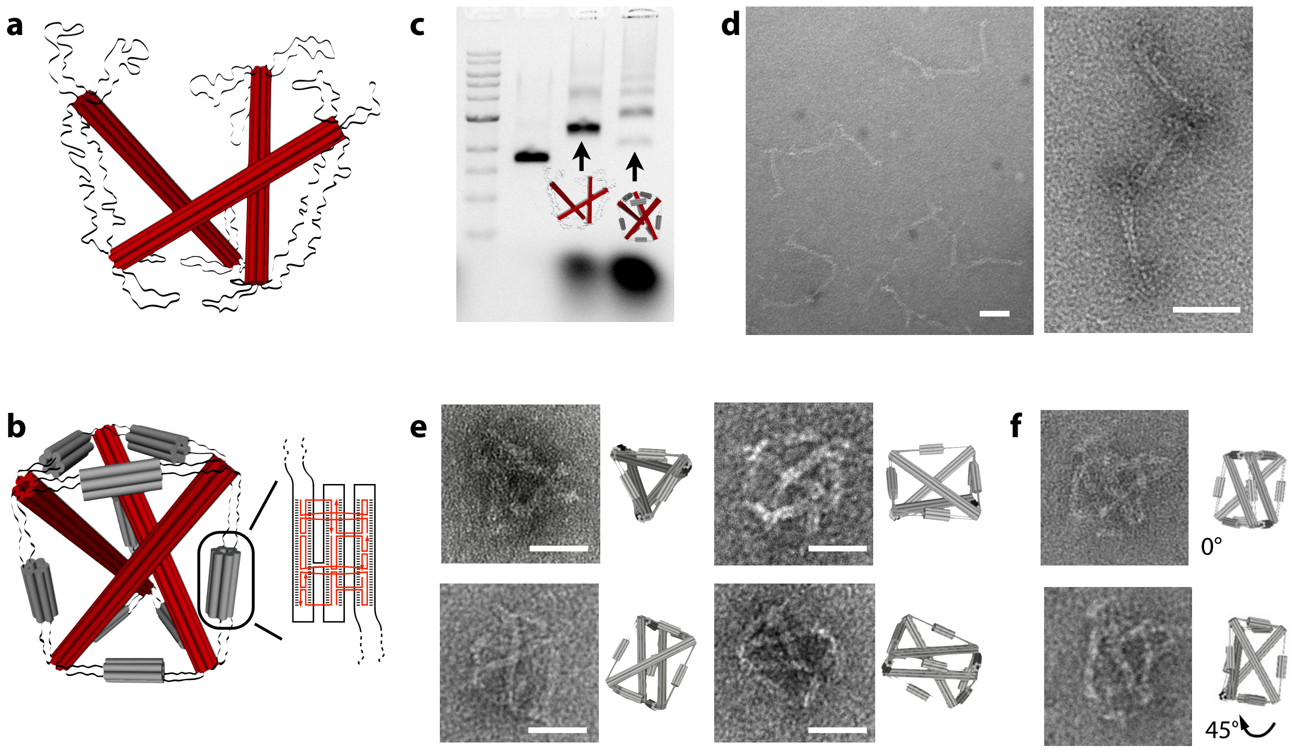

Figure S2 | Six-helix-bundle prism

The six-helix-bundle version of the tensegrity prism is built from three 62 nm long six-helix bundles implemented on a 8064 nt scaffold strand.
a) The three six-helix bundles of the object are connected by 2 × 2 stretches of unpaired bases (black wiggly lines represents ssDNA and each cylinder represents one dsDNA helix). Further ssDNA sections loop out of the ends of the six-helix-bundle.
b) Each of these loops is connected to a designated second loop via a short six-helix-bundle motif (clamp, grey cylinders and blow up), in each of which one of the two scaffold loops accounts for two of the six double strands and the other loop for the remaining four double strands. The connection between the loops is hence solely provided by staple oligonucleotide crossovers.
c) Gel analysis of folded structures (2% agarose, 0.5 μg/mL EtBr, 0.5x TBE, 11 mM $MgCl_2$, 4 h at 70 V). Lanes from left to right: scaffold p8064, three struts without clamps, prism. The fastest moving bands were extracted from the gel, centrifuged through a spin column, and imaged with TEM.
d) Two electron micrographs of structures folded in the absence of the clamping staples. Only triplets of six-helix-bundle connected by ssDNA can be found on the TEM grids. Scale bars: 50 nm.
e) If the clamping staples are present during the folding process, the desired prism structure assembles and can be imaged with TEM after gel-purification. Scale bars: 50 nm.
f) Some of the prisms retain their three dimensional structure after adsorption on the TEM grid. We believe, that in these cases the uranyl formate stain supports the DNA structures. Comparing TEM images and computer models before and after tilting by 45° reveals the three-dimensionality of the object.

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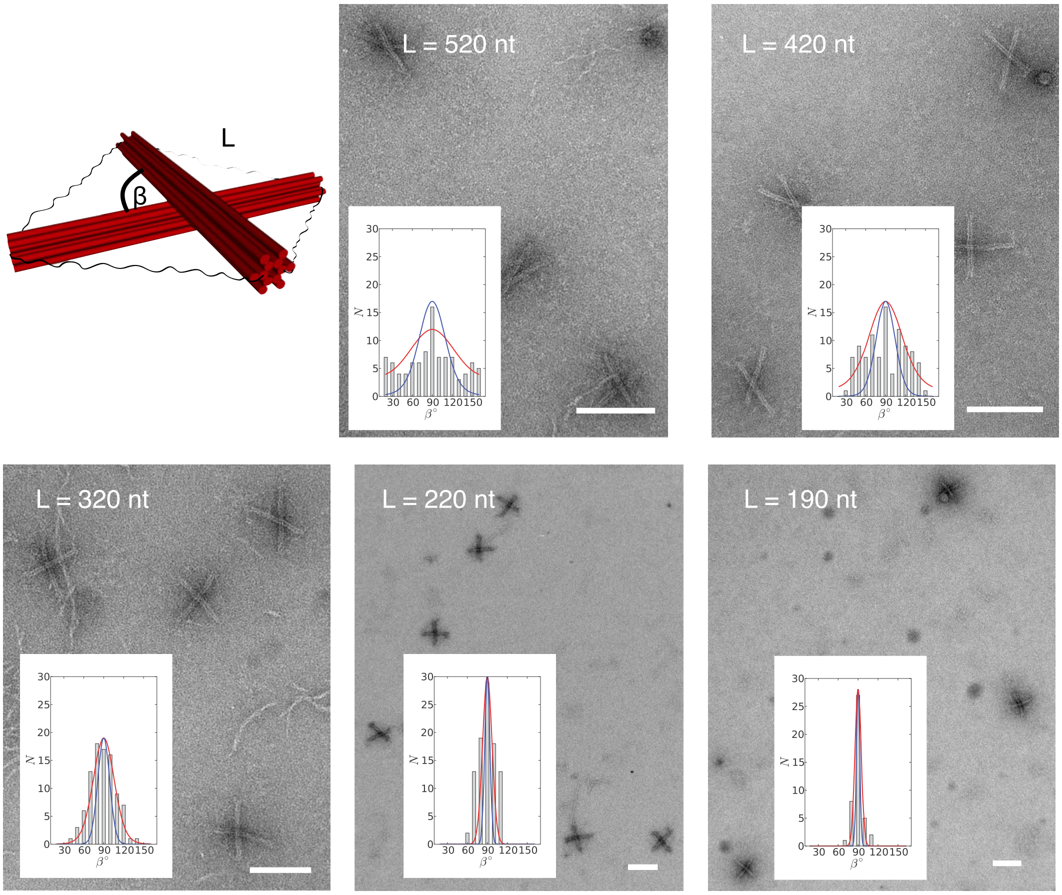

Figure S3 | TEM analysis of Twelve-helix bundle kites
Cylinder model and five electron micrographs of the twelve-helix bundle kites with histograms of the occurring angles β for five different spring lengths. For longer ssDNA springs and hence lower prestressed tension, a large variety of angles between the two crossing struts can be observed. Shortening of the springs by spooling of the unused bases (cf. figure 2) leads to higher tensed springs and a smaller distribution of angles between crossing struts. With increasing tension the yield of correctly folded objects drops. For kites with 170-nt-long springs and shorter we were not able to image two or more objects in one TEM frame. Scalebars are 100 nm.

The red continuos curves overlaying the histograms are numerical calculations of the equilibrium angles calculated from the modified freely jointed chain model, page S9, using the code on page S10.

The blue continuos curves are numerical calculations of the equilibrium angles calculated from a worm-like chain model, code and equation on page S11.

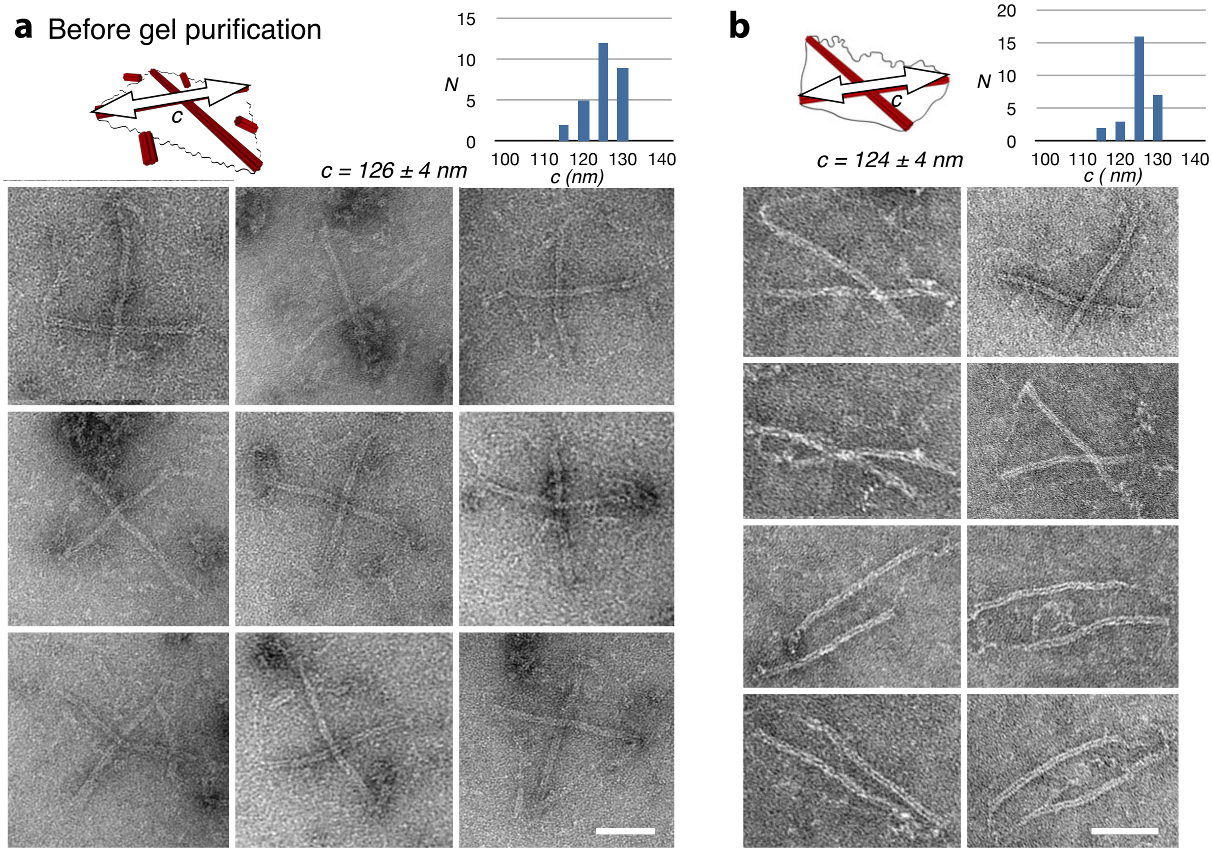

Figure S4 | Electron micrographs of six-helix bundle kite structures.

Six-helix bundle kites were imaged after the annealing process without further purification or treatment. Only single particles which were separated from aggregates or other particles on the grid were analyzed.

a) Kites adsorbed on the TEM grid show overall square-like appearance and the struts are not bent more than free, uncompressed, six-helix bundles (cf. S7). The average end-to-end distance of the ends of the six-helix bundles c is 126 nm. This is in close agreement with the expected value of 127 nm, the average end-to-end distance of a 128 nm-long six-helix bundle with a persistence length of 2.5 μm. In a square arrangement, the distance stretched by each DNA spring is 89 nm. The worm-like-chain model predicts for a 486 nt single strand stretched over this distance a force of 3.3 pN. Hence. a force of 4.7 pN compresses each strut. This is below the critical buckling force of 6.0 pN estimated for a 128 nm long six-helix bundle. Scale bar: 50 nm.

b) The struts of the asymmetric kites exhibit an average end-to-end distance c of 124 nm which is close to the expected value of 127 nm. If both struts are parallel, we can calculate the sum of the forces created by the three 286-nt long springs stretched over 62 nm (4.0 pN) and the 2230-nt long spring stretched over 186 nm (1.3 pN) acting in parallel. The sum (5.3 pN) is still below the critical buckling force of 6.0 pN estimated for a 128 nm long six-helix bundle. Scale bar: 50 nm.

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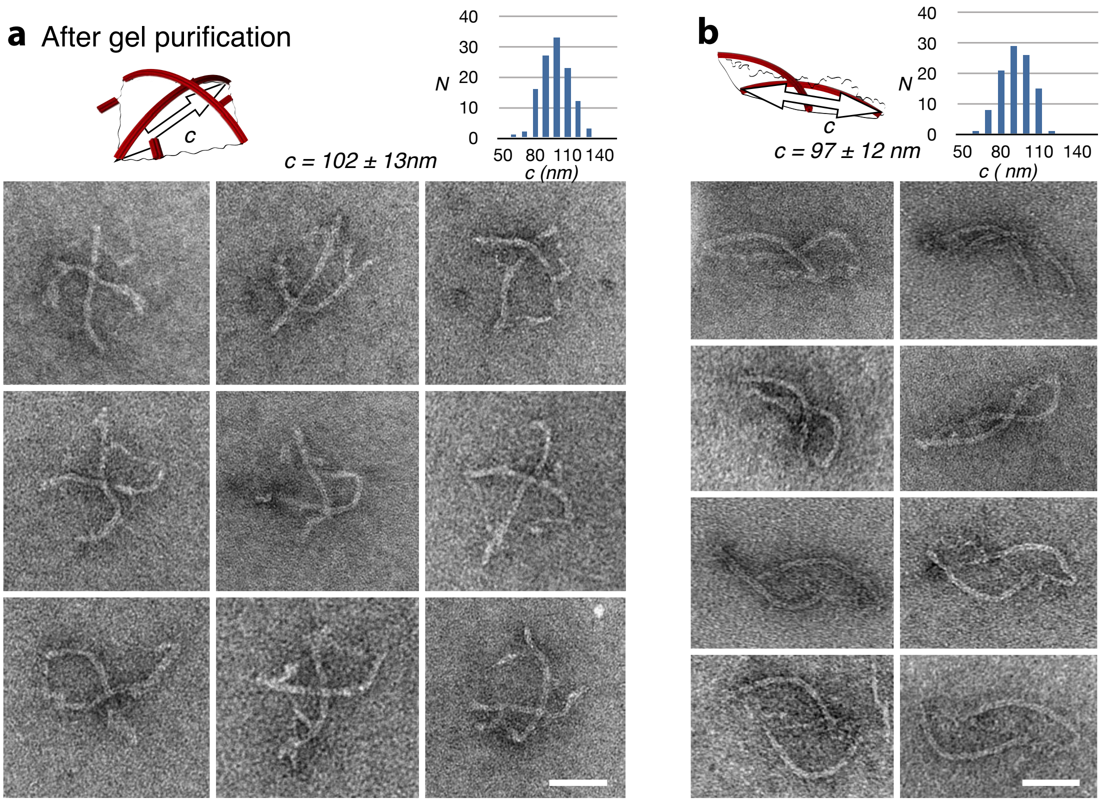

Figure S5 | Electron micrographs of six-helix bundle kite structures after gel-purification.

Six-helix bundle kites were imaged after physical extraction from 2% agarose gels.

a) Gel-purified kites show obvious distorted appearance. The struts are bent and the average end-to-end distance *c* has dropped to 102 nm. We reason, that the ends of the struts are pulled together by the forces generated within the entropic springs. During the process of gel electrophoresis, staining with ethidium bromide, and gel extraction the stability of the six-helix bundles has suffered. The average distance stretched by each DNA spring is now only 72 nm which translates into a force of 2.6 pN along each spring. Hence. a force of 3.7 pN compresses each strut while the strut exerts the equivalent restoring force. Our estimated value of 3.7 pN is close to the critical buckling force of 3.9 pN estimated for a 128 nm long six-helix bundle after gel-purification. Scale bar: 50 nm.

b) Gel-purified struts of the asymmetric kites exhibit an average end-to-end distance *c* of 97 nm. The forces created by the three 286-nt long springs stretched over 49 nm (3.0 pN) and the 2230-nt long spring stretched over 146 nm (1.0 pN) acting in parallel sum up to 4.0 pN. This value is in very good agreement with the critical buckling force of 3.9 pN estimated for a gel-purified 128 nm long six-helix bundle. Scale bar: 50 nm.
We have shown in this figure, that the persistence length of gel-purified DNA-origami six-helix bundles drops to ~ 60% of the value of unpurified six-helix bundles. This is in accordance with independent measurements of the persistence length of six-helix bundles as described in figure S8.

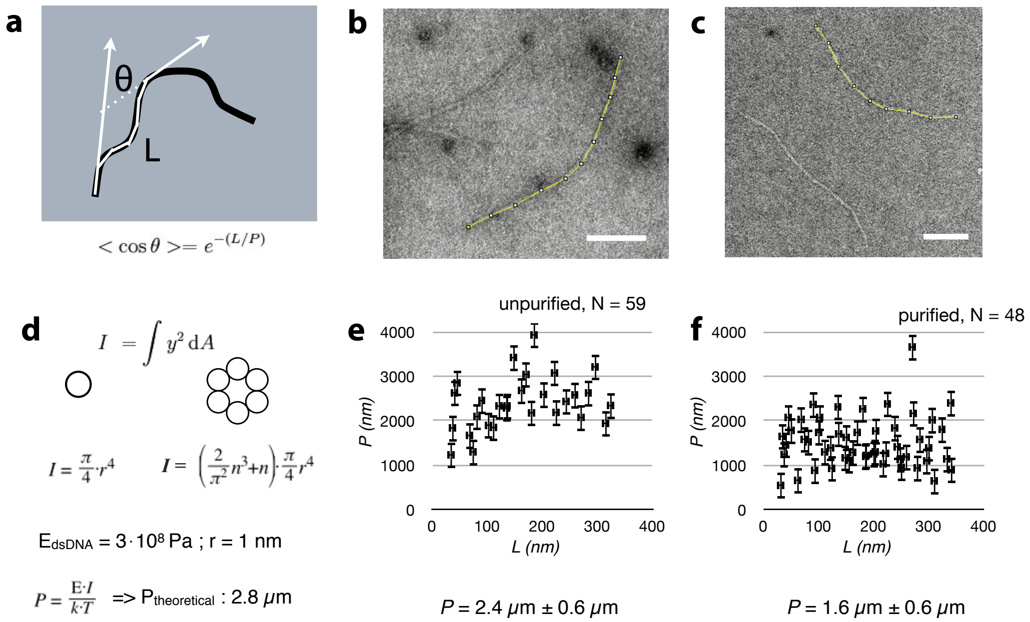

Figure S6 | Persistence length of six-helix bundles I

a) The persistence length describes the length along the contour of a polymer over which the angular correlation between two tangential vectors is lost. If L defines the contour length between two tangents to the path of a polymer in space and θ the angle between these two tangents the persistence length P can be expressed as: $<\cos \theta_{3D}> = \exp(-L/P)$.

b) Electron micrograph of a 428 nm long six-helix bundle imaged after annealing without further purification or treatment. Segmented lines were drawn along 59 six-helix bundles adsorbed to carbon-coated TEM grids. The angular correlation between the segments of the lines was analyzed. Because the bundles are assumed to adsorb irreversibly to the TEM grid, the 2-dimensional deflection angles in the images should correctly sample the distribution of 3 dimensional deflection angles of the bundles in solution. This assumption has proven to be useful in AFM measurements, where the persistence length of dsDNA and dsRNA adsorbed on mica via polylysine turned out to be in good agreement with measurements using other techniques [Abels05, Joanicot87, Frontali88] Scale bar: 100 nm

c) Electron micrograph of a 428 nm long six-helix bundle imaged after gel-purification. These six-helix bundles show more kinks than the unpurified objects. We attribute this fact to the incorporation of ethidium bromide into the double helices and mechanical damage during gel-extraction. Segmented lines were drawn along 48 gel-purified six-helix bundles and the angular correlation between the segments was analyzed. Scale bar: 100 nm.

S6

d) Simplified cross-sections of a DNA double strand and of a six-helix bundle. The increased 2nd moment of inertia I can be used to estimate the persistence length of such a bundle using the established value of $3 \cdot 10^8$ Pa for dsDNA to be 2.8 μm.

e) and f) Analysis of angular correlation between polygon segments. Each point of measurement represents values for P determined from the average over all angles measured between any two segments with a given contour distance. The average over all these measurements yields a value for P of 2.4 ± 0.6 μm for unpurified six-helix bundles and 1.6 ± 0.6 μm for gel-purified six-helix bundles.

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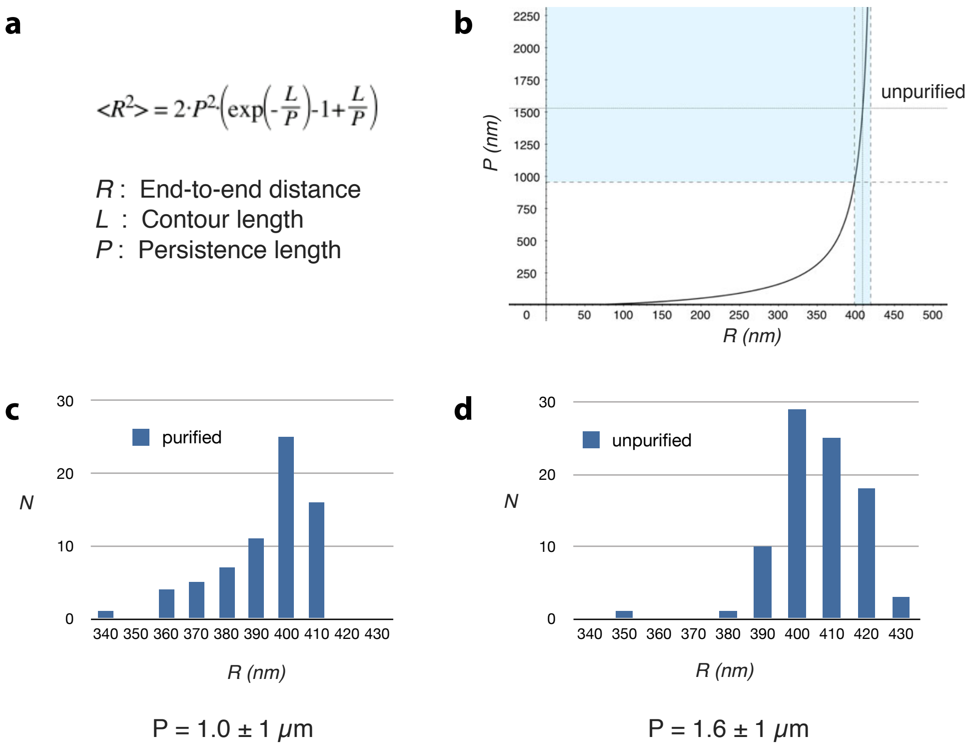

Figure S7 | Persistence length of six-helix bundles II

An alternative way to measure the persistence length of a semiflexible polymer is to measure its end-to-end distance [Howard01, Landau80]. This method works best for molecules of a length close to their persistence length. The six-helix bundles investigated here have a length of 428 nm while their persistence length is estimated to be six times larger. For this reason we expect a highly inaccurate measurement, but the tendencies will be the same as in the measurements based on angle-correlation analysis.

a) Expression for the mean-squared end-to-end distance.

b) Expression given in a) plotted for a contour length of 428 nm. The end-to-end distance of 409 ± 10 nm for unpurified six-helix bundles is highlighted. The large region of possible error underlines the inappropriateness of this method for the objects investigated here.

c) Histogram of measured end-to-end distances of gel-purified six-helix bundles.

d) Histogram of measured end-to-end distances of unpurified six-helix bundles.

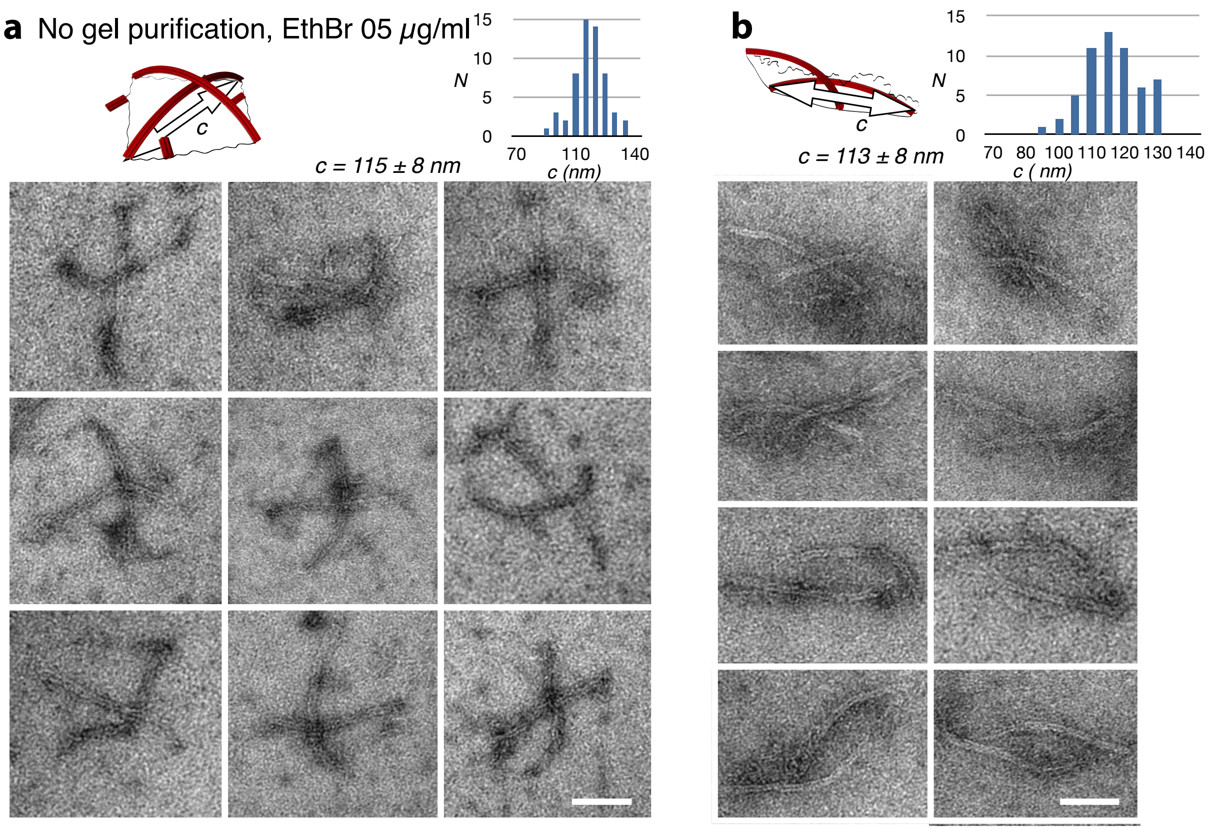

Figure S8 | Electron micrographs of six-helix bundle kite structures soaked in ethidium bromide.

Six-helix bundle kites were imaged after the annealing process followed by a 4 -h-long bath in 1 μg/ml ethidium bromide without further purification. Only particles which were separated from aggregates or other particles on the grid were analyzed.

a) Ethidium-bromide-treated kites show distorted appearance. Most of the struts are bent and the average end-to-end distance *c* is 115 nm. In this geometry, the average distance stretched by each DNA spring is 81 nm which translates into a force of 2.9 pN along each spring. Hence a force of 4.1 pN compresses each strut and at the same time each strut exerts a restoring force of 4.1 pN. Scale bar: 50 nm.

b) Gel-purified struts of the asymmetric kites exhibit an average end-to-end distance, *c*, of 113 nm. The sum of the forces created by the three 286-nt long springs stretched over 56 nm (3.5 pN) and the 2230-nt long spring stretched over 170 nm (1.1 pN) acting in parallel. Here we find that a force of 4.6 pN compresses each strut. From this and the measurement described in (a) we estimate the persistence length of ethidium-bromide-soaked six-helix bundles to be 1.7 ± 0.3 μm. Scale bar: 50 nm.

In summary, we found that ethidium bromide lowers the stability of DNA-origami six-helix bundles. A drop in persistence length of ~ 70% compared to untreated six-helix bundles has been observed.

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Entropic spring DNA

Single stranded DNA can be described in a first approach as a freely-jointed chain (FJC), which reflects a random walk of the chain's elements and does not take into account self avoidance of the elements. There is no restriction to the orientation of each monomer with respect to that of each other. N monomers, (e.g. nucleotides) form the polymer (e.g. chain of nucleotides), whose total unfolded length is:

$$L=N*l,$$

where N is the number of monomers and l the length of the Monomer. The average end-to-end distance, R, of the polymer is given by this expression:

$$\langle R^2\rangle=(N)*l^2$$

This simple model ignores effects of self-avoidance, which would lead to larger average end-to-end distances.

The Kuhn length l_k reflects the realistic length of one model-chain element (i.e. $l_k \geq l$) and for semiflexible polymers like ssDNA, l_k equals twice the persistence length P. A value of $l_K = 1.5$ nm [Smith96] describes the behavior of ssDNA satisfactorily.

Generally speaking, each possible end-to-end distance can be realized by a number of conformations of the polymer. The shorter the end-to-end distance for a polymer of given length is, the higher is the number of possible conformations the polymer can adopt in space. Thus a short end-to-end distance is more likely than a long end-to-end distance of a streched polymer. Using the freely-jointed chain model, one can express the force F exerted on each at the ends of a long ($R>>l_k$) polymer as:

$$\langle F\rangle=-3k_BT \cdot R \,/\, N_k(l_k^2)$$

In this expression, N_k refers to the number of Kuhn segments.

Smith et al. demonstrated, that a modified freely jointed chain model (mFJC) that incorporates stretchable Kuhn segments which align under force can serve as a model for ssDNA and dsDNA [Smith96]:

$$R(F) = L\cdot[\ \coth(\ Fl_K/k_BT\ ) - k_BT/Fl_K\ ]\cdot(\ 1 + F/S\ )$$

where S is the stretch modulus for the polymer (for ssDNA S = 800 pN) and L its contour length (for ssDNA L = 0.5 nm · # of bases).

References:

[Howard01] Howard, J., Mechanics of Motor Proteins and the Cytoskeleton, *Sunderland, Sinauer Associates, Inc*. (2001)

[Landau80] Landau, L. D., Lifshits, E. M., Pitaevskii, L. P., Statistical Physics. *New York, Pergamon Press* (1980)

[Abels05] Abels, J. A., Moreno-Herrero, F., van der Heijden, T., Dekker, C., Dekker, N.H., Single-Molecule Measurements of the Persistence Length of Double-Stranded RNA. *Biophys. J*. **88**, 2737-2744 (2005)

[Smith96] Smith S.B., Cui, Y.J., Bustamante C. Overstretching B-DNA: The Elastic Response of Individual Double-Stranded and SIngle-Stranded DNA Molecules. *Science* **271** 5250, 795-799 (1996)

[Frontali88] Frontali, C. Excluded-Volume Effect on the Bidimensional Conformation of DNA Molecules Adsorbed to Protein Films. *Biopolymers* **27**, 1329-1331 (1988)

[Joanicot87] Joanicot, M., Revet, B., DNA Conformation Studies from Electron Microscopy. I. Excluded Volume Effect and Structure Dimensionality. *Biopolymers* **26**, 315-326 (1987)

```
#!/usr/bin/env python
# encoding: utf-8

'''
Angle distribution calculation based on mFJC model for the tensegrity kites.

'''
# Python standard libraries
import string
import os
import sys

# Some matplotlib libraries
import math
import numpy as np
from scipy import interpolate
from scipy import integrate
import matplotlib.pyplot as pyplot


class calculator():

    def __init__(self):
        #Some constants
        self.Kb=1.3806504E-23
        self.kuhnLen=1.5E-9
        self.strutLen=91.0E-9
        self.T=298.15
        self.equiMonoLen=0.5E-9
        self.stretchModulus=800.0E-12


    def enFunc(self,c,numBases):
        """Energy function used to calculate spring energy. Variable c is the spring
           end-to-end distance."""
        # Worm like chain, integrate from 1nm to c:
        y = integrate.quad(self.fOfC,1E-9,c)
        return y[0]


    def sprLen(self,gamma):
        """Given an angle in degrees between the struts, give the spring end-to-end
           distance"""
        return math.sqrt(2*math.pow(self.strutLen/2.0,2)-
                    2*math.pow(self.strutLen/2.0,2)*math.cos(gamma*math.pi/180.0))

    def boltz(self,energy):
        """Given an energy and a temp, calculate the boltzman probability weight of
           that state."""
        return math.exp(-1.0*energy/(self.Kb*self.T))

    def extensionWLC(self,N,f):
        """Returns the extension of mFJC according to Smith, Cui, Bustamante (1996)"""
        cothTerm=math.cosh(f*self.kuhnLen/(self.Kb*self.T))/
                                math.sinh(f*self.kuhnLen/(self.Kb*self.T))
        return N*self.equiMonoLen*( cothTerm - self.Kb*self.T/(f*self.kuhnLen) )*
                                (1+f/ self.stretchModulus)

    def fillWLCtable(self,fStart,fEnd,points,numBases):
        """Makes a interpolation table of extension vs force with 'points'
           number of entries,
           this is later used to get the force for a certain extension."""
        increment=(fEnd-fStart)/points
        forces=[]
        extensions=[]
        for i in range(points):
            force = fStart+increment*i
            forces.append(force)
            extension=self.extensionWLC(numBases,force)
            extensions.append(extension)
        fc=np.array(forces)
        cs=np.array(extensions)
        self.fOfC=interpolate.interp1d(cs,fc)


# This is the L value in this example the spring length is L=520
numBases=520

# Start the class up
calc=calculator()
calc.fillWLCtable(0.001E-12,60E-12,5000,numBases)

# For each angle store the boltzmann weight
angles=np.linspace(20,160,num=200)
wh=[]
for angle in angles:
    E1=calc.enFunc( calc.sprLen(angle),numBases )
    E2=calc.enFunc( calc.sprLen(180-angle),numBases)
    totalE=2*E1+2*E2
    wh.append(calc.boltz(totalE))

weight=np.array(wh)
# The theoretical curve for L=520 is now given by x=angles and y=weight
pyplot.plot(angles,weight,color='red')
```

S10: Code used to numerically calculate the spring equilibrium lengths using the modified freely jointed chain model found in:

Smith S.B., Cui, Y.J., Bustamante C. Overstretching B-DNA: The Elastic Response of Individual Double-Stranded and SIngle-Stranded DNA Molecules. *Science* **271** 5250, 795-799 (1996)

These calculations are used to get the red numerical curves in the histograms in fig. S3

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```
#!/usr/bin/env python
# encoding: utf-8

'''
Angle distribution calculation, tensegrity kite.
Using a WLC-model
'''

# Python standard libraries
import string
import os
import sys

# Some matplotlib libraries
import math
import numpy as np
from scipy import interpolate
from scipy import integrate
from scipy import optimize
import matplotlib.pyplot as pyplot

class WLCmodel():

    def __init__(self):
        #Some constants
        self.Kb=1.3806504E-23
        self.strutLen=91.0E-9
        self.T=298.15
        self.equiMonoLen=0.5E-9
        self.stretchModulus=50.0E-12
        self.P=0.75E-9
        self.LastValue=0 # This is the starting guess for the numerical solution to
                         # the WLC equation. Stores the last known solution.

    def WLCequation(self,x,F,N):
        '''This is the WLC equation, the roots give the extension at a certain force.
        The equation is solved numerically in method 'self.extension()'.'''
         P = self.P
         Lzro = self.equiMonoLen*N
         Kzro = self.stretchModulus
         kbT = self.Kb*self.T
         return ( F*P/kbT + 0.25 - x/Lzro + F/Kzro )*math.pow( 1 - x/Lzro + F/Kzro ,
2)-0.25

    def extension(self,N,f):
        '''Returns the extension of a WLC according to XXX'''
        self.LastValue=optimize.fsolve(self.WLCequation,self.LastValue,args=(f,N))
         return self.LastValue

    def enFunc(self,c,numBases):
        """Energy function used to calculate spring energy. Variable c is the spring
           end-to-end distance."""
        y = integrate.quad(self.fOfC,1E-9,c)
        return y[0]

    def sprLen(self,gamma):
        """Given an angle in degrees between the struts, give the spring end-to-end
dist"""
        return math.sqrt(2*math.pow(self.strutLen/2.0,2)-2*math.pow(self.strutLen/
2.0,2)*math.cos(gamma*math.pi/180.0))

    def boltz(self,energy):
        """Given an energy and a temp, calculate the boltzman probability weight of
that state."""
        return math.exp(-1.0*energy/(self.Kb*self.T))

    def fillTable(self,fStart,fEnd,points,numBases):
        """Makes a interpolation table of extension vs force with 'points' number of
entries,
           this is later used to get the force for a certain extension."""
        increment=(fEnd-fStart)/points
        forces=[]
        extensions=[]
        for i in range(points):
            force = fStart+increment*i
            forces.append(force)
            extension=self.extension(numBases,force)
            extensions.append(extension)
        fc=np.array(forces)
        cs=np.array(extensions)
        self.fOfC=interpolate.interp1d(cs,fc)

# This is the L value in this example the spring length is L=520
numBases=520

# Start the class up
calc=WLCmodel()
calc.fillTable(0.001E-12,60E-12,5000,numBases)

# For each angle store the boltzmann weight
angles=np.linspace(20,160,num=200)
wh=[]
for angle in angles:
    E1=calc.enFunc( calc.sprLen(angle),numBases )
    E2=calc.enFunc( calc.sprLen(180-angle),numBases)
    totalE=2*E1+2*E2
    wh.append(calc.boltz(totalE))

weight=np.array(wh)
# The theoretical curve for L=520 is now given by x=angles and y=weight
pyplot.plot(angles,weight,color='blue')
```

S11: Code used to numerically calculate the spring equilibrium lengths using the worm-like chain model described by:

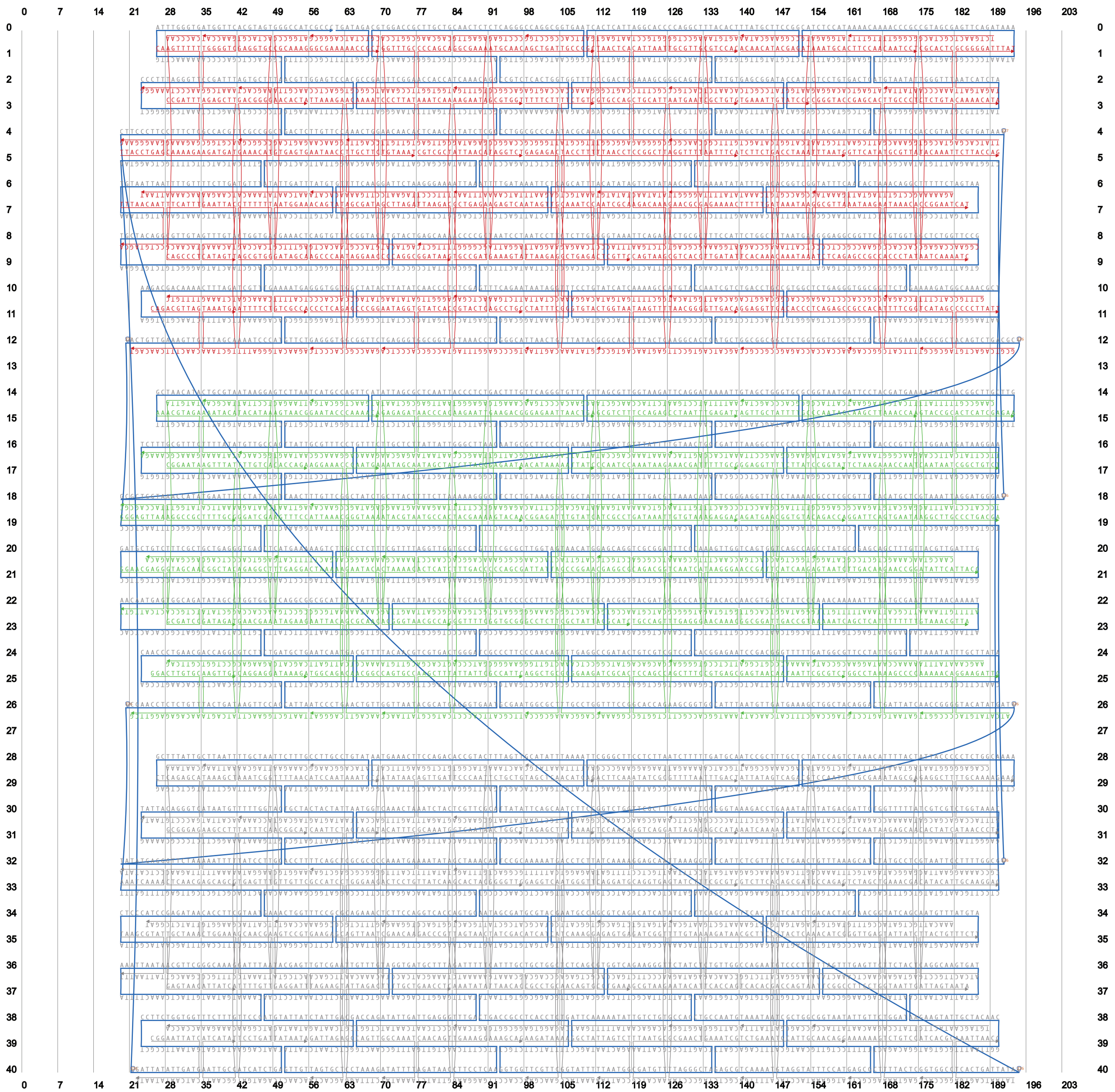
J. F. Marko and E. D. Siggia, Stretching DNA, *Macromolecules* **28**, 8759 (1995)

M. D. Wang, H. Yin, R. Landick, J. Gelles, S. M. Block, Stretching DNA with Optical Tweezers. *Biophysical Journal* **72**, 1335-1346 (1997)

These calculations are used to get the blue numerical curves in the histograms in fig. S3

$$\frac{FP}{k_BT} = \frac{1}{4}\left(1 - \frac{x}{L_0} + \frac{F}{K_0}\right)^{-2} - \frac{1}{4} + \frac{x}{L_0} - \frac{F}{K_0}$$

Prism (p8634)



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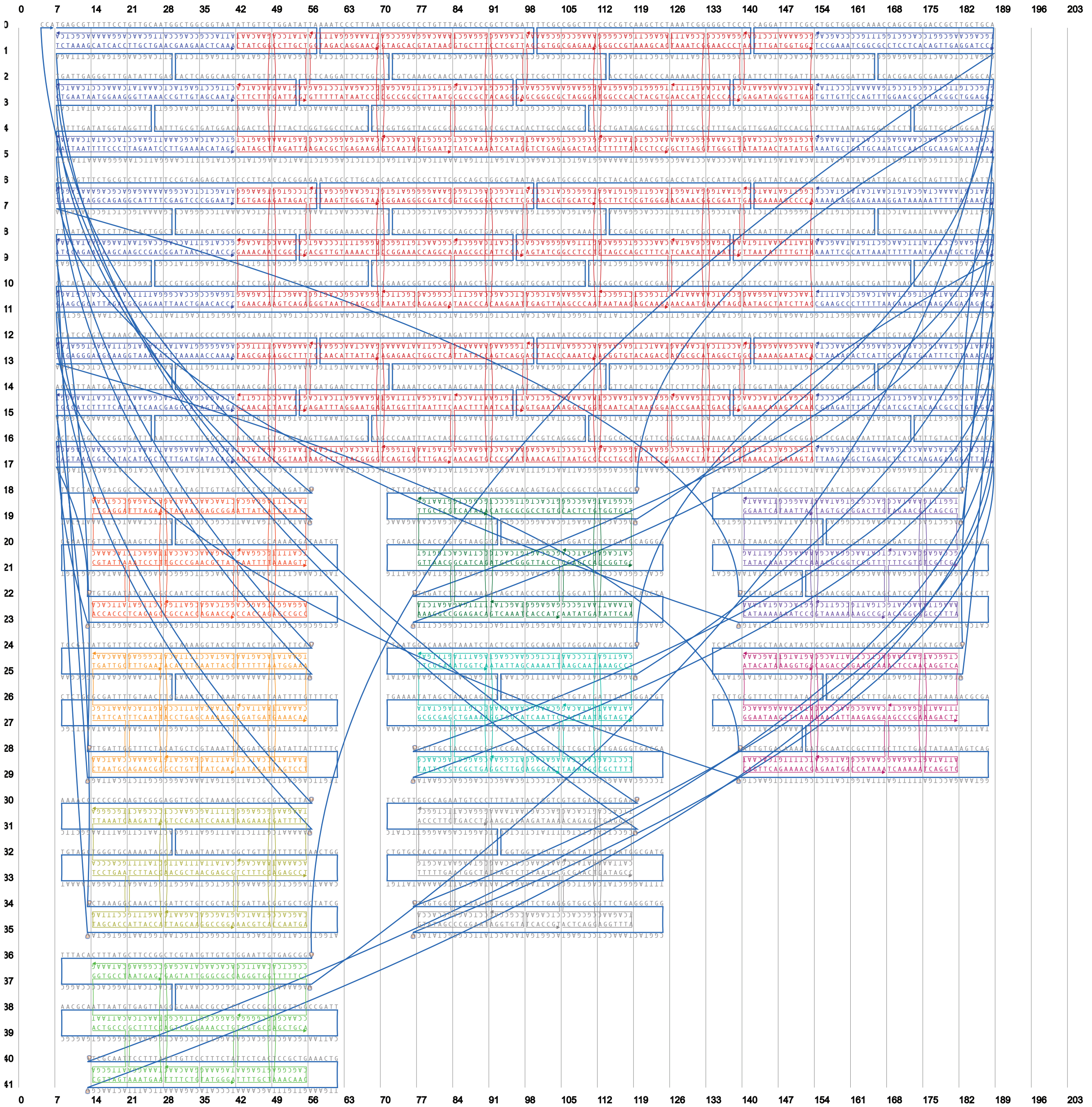
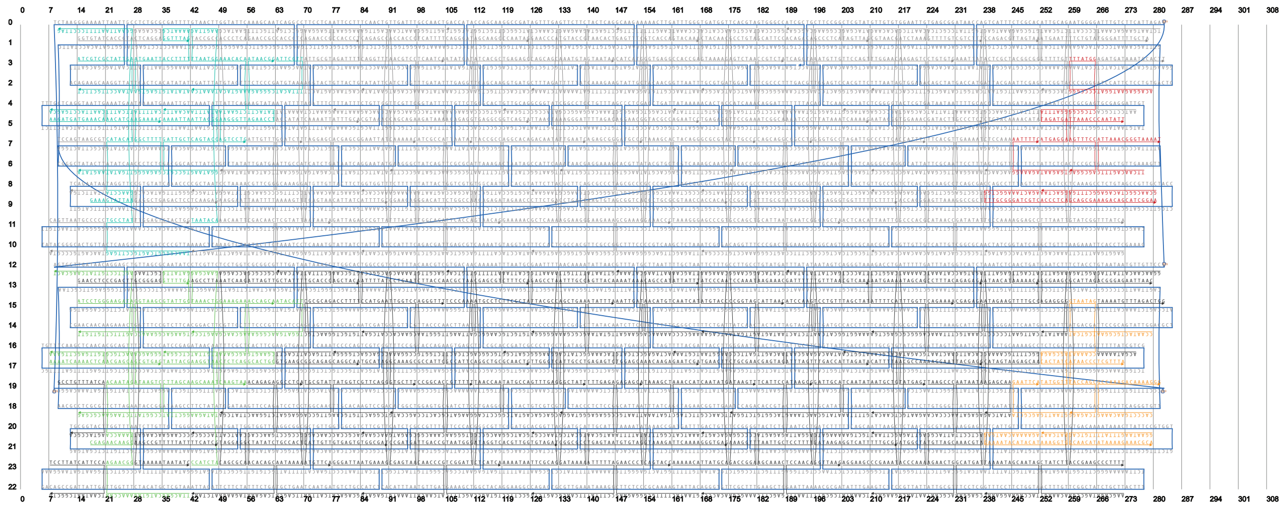
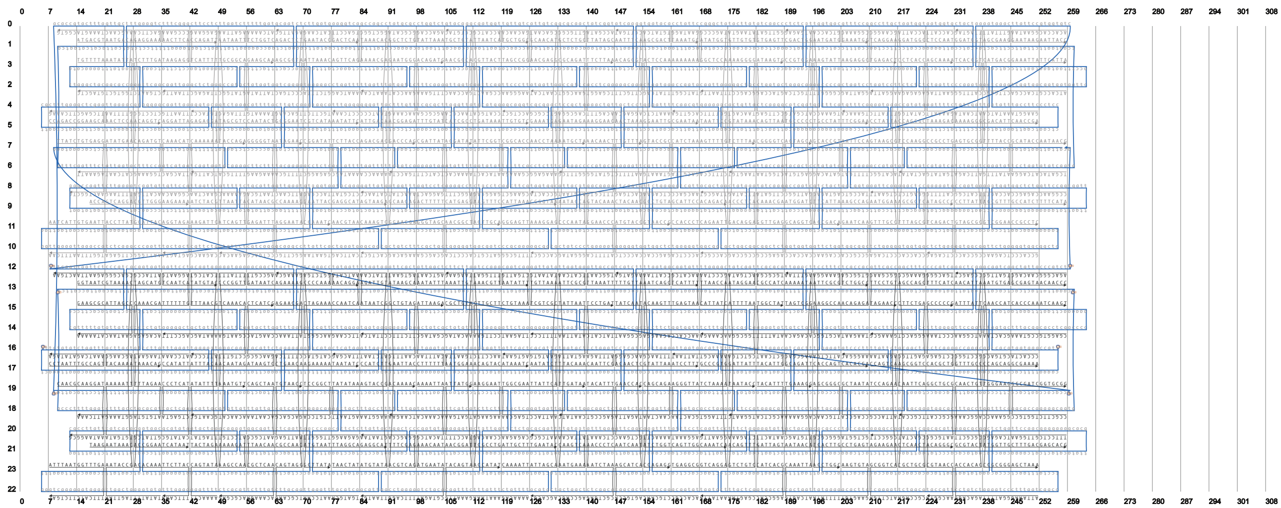
x bundle prism (p7560)



Twelve-helix bundle kite (p8634)



Twelve-helix bundle kite exibiting enzymatically activated rearrangement (p7848)



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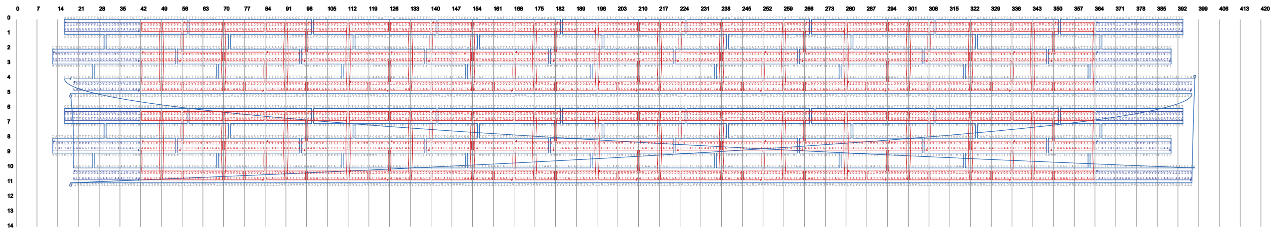
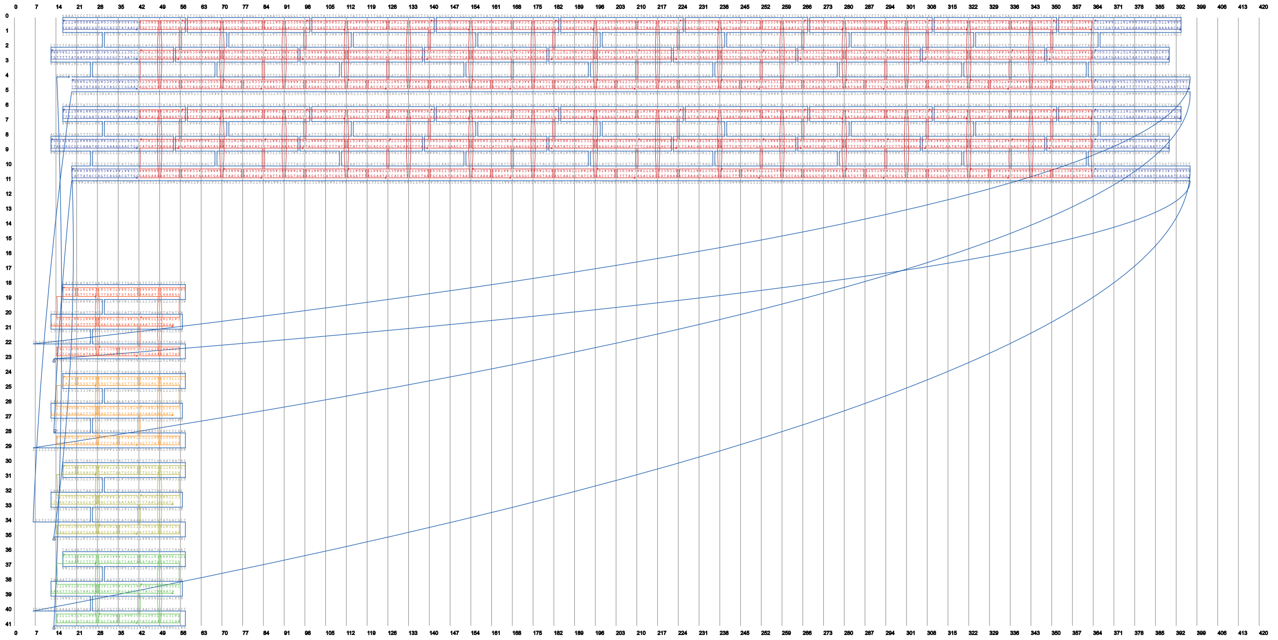
Six-helix bundle kite (Three 273-nt-long and one 2204-nt-long spring, p7560)



Six-helix-bundle kite with four clamps (p7560)



```
Prism (p8634):

1st Strut (red)
Start   Sequence
0[34]   CACCCAACAGCCCTTACAACGTTCATTTAACAAAATTAAT
0[55]   ATGGCCCGATAGCAAGTTTCGAATGGAAACAGTATCACCCTC
0[97]   CCCTGAGGAAAGTAAGGATTAAGAGTCAATAGTTGCAGTTAA
0[139]  AGTGTAATTGATATATGGAAAAGAAAACTTTTTGACGCCGCC
0[160]  ATGGAGAATCTCAGAGCCGCCACCCTATGCGGGTTCAATCCT
0[189]  TCTGAACTCGCTACGAATCAAAATC
1[26]   CAAGTTTTTAACCCTAAAGGG
1[70]   GGTTTGCTCCGAAATCGGCGTGGACTCCAACGTTAAACACTA
1[112]  TAACTCACAGTCGGGAAACCACCAGTGAGACGGCCGCGTGGT
1[140]  ACAACATACGAGATAAATGCACTTCCAATTGTTTT
1[175]  CGCACTCAAACCCACTCTGTAGTACGGTTACAAATTCTTACCAG
2[41]   AAATCGGTGGGGTCGAACCAT
2[83]   TGGTGGTCCCAGCACAGCAAGCGGTCCACCCAGGCGGATAAG
2[125]  CGCTTTCCATTAATGGTGCCTAATGAGTCTCGTTC
2[167]  ATGAGTCACAGGAGAATGGTATCCGCTCACAATCTCGCTGTG
2[190]  TAGATGATTGCGGGGATTTAT
3[28]   CCGATTTGAGAAAGCAAAAGAAGATGATGAAACATCCGGCGA
3[56]   TTAAAGAAACACTGAGCCCAAACCACCCTCATTTTGTCGCCA
3[98]   TTTTCTTAAGGATTTTAAGAGCCTATTATTCTGAAAGCCTGC
3[112]  GTGCCAGAGGCGGTTTAACCTCCGGCTTAGGTTTTCAACGCG
3[140]  TGAAATTAGCCAGATCACAAACAGGTCAGACGATTGTTGACA
3[154]  CGGGTACCGAGCACGGAACCGCCTCCCCGGCGTTAGAAATAC
4[41]   ACGTGGCAGAGCTTTACAAACCATAGTT
4[62]   GGAACAAGAGTCAGGTGAGTGAATAACCACACATA
4[125]  CGGGGAGCTGCATTCTCTGAATTTACCCAATCGCATATATGT
4[190]  TTATCACGACAAAACATA
5[19]   TTACCTGAGGAAGGGAAG
5[77]   CGTCGCTATTAACAGAGATAGGGTTGAGAAATCAATTTGCTC
5[98]   GAGAGACGAGAATTTATCAAAATTTAAT
5[140]  TCTTCTGGTCAAATATATTTTAGGGGTT
5[161]  GTTCATATGCGTTAGGAAACGATTCGAATTCGTAATTTAATG
6[55]   AATCAATATAAACATCAAGAAGAATTACTGCTAAATAAATGA
6[83]   TTTCCCTTTAAGACTACCGCCGTATCACCGTACTCACTCGAG
6[111]  AAATGCTTACCTTTTTGCGTATTGGGCGCCAGGCCTAGGTCT
6[125]  ATATAACAGACAAAGAGTAACTAAGTTTTAACGGGGTACAT
6[153]  CGACCGTACCTAAATCATGGTCATAGCTGTTTCGCAATTTCA
6[181]  AGAAAAAGCCTGTTTAGTATTAATAAGAGGCCAGA
7[19]   TTTAACAATCCTGTAGCA
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8[76]   AGTACATGCTTAGATAGAATCCTTGAAATTGCTTCCCAGTTT
8[186]  CGGAACCAGAGCCCGGAATCAT
9[42]   AGCGTGGACTACGTGAGGTGCCGCAAAGGGCGAAAAACCGCT
9[84]   TGCCGATAGAGTTGGGCGAAAATGCAACAGCTGATTGCCCGC
9[119]  CAGTAAGCGTCACCAGCCTGGTGCGTTGCGTCCAC
10[83]  AGGGTTGATATAAGTATAGCCTAGGAACCGTCTATCAGGGCG
10[125] GGCTTTTGATGATACAGGAAAGCTGAGAGATTCACCGCCTGG
10[167] CCGCCACCCTCAGAGCCACGGCAAATAATGCCGGAAGCATAA
10[187] GTTTGCCATCTTTTCATAGCAGCGCGT
11[25]  CAGACGTTAGCAACTTTCAACAGT
11[42]  ATTTTCTCAAACGATCTAAAGTTTTGTC
11[56]  CCCTCAGAGCCCGGAATAGGTACCCTCA
11[98]  CTATTTCGGGTGTACTGGTAAAGTGCCC
11[140] GGAGGTTGACACCCTCAGAGCCGCCACATTTTCGGTCCAGAA
12[55]  AGAACATGGGATTTCTTTTTTTCACCAGGACGGGGAAGCACT
12[69]  GAACCGCAGCGATAGTACCGTACAAAATCCCTTATTGTTGTTTGTAAAT
12[97]  TGCCCGAGGTTTAGGCTGAGAGCGGGGTAAGAATATGTTTGA
12[111] GTATAAACAAATCCTCAAGAGTTCTGTC
12[139] AGCATCAGTGCCTTGAACGCGGCGCAGTAATGAATCACTGCC
12[160] ACCACCACCAGAGCTAAATAATCATTAAGTATCCC
12[174] TTTCATCATAAACACACCACCTTGCCCTATATTAC
12[193] GCGTCAGACTGTCCCCTTATT

2nd strut (green)
Start   Sequence
14[34]  TATGTTAGCGATCCTCTGCCAGTAGCAAAGCGAAAGACA
14[55]  TTAAGACATAGAAGCGCCTGATTGAGGACTAAAAACAGGGAT
14[97]  CAAAGTCGGTGCGGGGGATGTCCCAGCGATTATTAAGCGCCA
14[139] AATTTTAAACAAACGGTGTAGTAAGGGAACCGATTCAACATT
14[160] CATTACCAAAAATCAGCTCATTTTTTTTTTCATCGAAACCAA
14[189] CAAGCCGTTTTTATTGTAAACGTTA
15[26]  AAACGTAGAGAAACGCAAAGA
15[70]  GAGAGATAGAGCAAGAAACAGGAAACGCAATAAGTCACCAGA
15[112] GCGTCTTCAGCCATATTATCAGGGAAGCGCATTGTGAGAATA
15[140] AGTTGCTATTTTGCCCAATAGCAAGCTTTAGGAAT
15[175] GTACCGCATTCCAACAATAATAATTTACAGGCTTGCCCTGACGA
16[41]  TATAAAAAAATACATACGCAG
16[83]  AATAATAAACCCACAATTGAGCGCTAATACGGGTAACGCCAG
16[125] AAATAAATCCAGAGTCTTACCAACGCTAACGCATC
16[160] AGATATAGAAGGGAAGCCTTAAATCACCTTTTGCG
16[190] TTCCTTATCACTCATCGAGAA
17[28]  CGGAATATATGGTTAGGCCGCTTTTGCG
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17[56]  AGGAAACAATGCGCAATTACAATTGATTCAGCATCATAAAGA
17[70]  AATAGCAAGTAAGCATACGTAATGCCACTACGAAACCCTTTT
17[98]  ACATAAACGAAAGGGCCTCTTCTGTTGGGAAGGGCGCCATTC
17[112] CCAATCCAATGAAAATCGCCTGATAAATTGTGTAATGTTTAA
17[140] GGAGGTTTCACGTTGGCGGATCGTCGGA
17[161] TCTAAGATAAATTTTTGTTTGAGTAATCCATAGGC
18[55]  AGTTAATAGTTTCCATTAAACAAGACTTTTTCATG
18[83]  TAAGAAAATAGCTAGGCGATTAAGTTAGCTAAAACAAAACGA
18[125] CGTCAAAAAATAAGCATCGTAACCGTGCCGAGGCGCCTGCTC
18[190] TCCCATCCTCGGCTGTCT
19[19]  GGGAGTTAATACCAGCGC
19[42]  GGATCGACAATAGAAAATTCAAGTTTATGGCTATAGATAGAT
19[98]  CGGAGATCTACCAAGCGCGAAACAGGCA
19[140] AGATGAACCACTGACCAACTTTGCGAAA
19[161] GGATTCAGTGAATAGAGCATGTAGAACGCGAGGCGCAGACCA
20[48]  AGGTCACCCTCAGCCGGCTACATCAGTAAAGTTGC
20[69]  AAGAGGCGGGTAAAAGATAGCCGAACAA
20[83]  CCAACCTACTCATCCATGCGTAAGCTTTATTATTCGATCCCA
20[111] CATGTTATTGTATCATAGCAGCCTTTACAGAGAAGAGTACAA
20[125] TCCGCGACAGACGGCTGGTGCTCCAGCCAGCTTTCTGGGGAC
20[153] TGGCTGACGGTGTATTTTAGCGAACCTCCCGACTTAGAGGAC
20[181] CAACGTAACAAAGCTGCTCCGTTGACAAAGTCCTG
21[19]  GGAACGAGGCTCATTGTT
22[186] ATTTTGTTAAAAATATTCATTACC
23[42]  GAACGAATCCTTATTACATAAAGTAACGGAATACCCAAAACA
23[84]  GGTTTTCAGAGGGTAAGAATTGAAGACGGGAGAATTAACTGA
23[119] TGCCAGTTTGAGGGTCCTGAACCTAATTTGAGATT
24[83]  GTCACGACGTTGTAAAACGTCGCGCAACATGAACTGGCATGA
24[125] GACGACAGTATCGGCCTCAAACGCTATTACGAACACCCTGAA
24[139] TTCTCCGCGTGAGCGAGTAACAATAATTCGCGTCT
24[153] AAAAACCTGACCGTGCGCACCCAGCTAC
24[187] AAGCAAATATTTAAAAAACACCCGGTT
25[25]  GGACTTGTGCAACAGAGAGGTTCG
25[42]  CAGGAGGAGAAGACGCCTGGTCGTTCAG
25[56]  TGGCAGACAACGGCCAGTGCCATTAACC
25[98]  AGGCTGCGCGGAAGATCGCACCGGAAAC
25[161] GGCCTAAAAGCCCCAAAACCAATAGGAACGCCATC
26[55]  TAATGCTGGAACTTAGAGGCTACCACCATTTGTCAGGCAACA
26[69]  AACAGTTGAATACACAATAAACGAATGA
26[97]  TTCGCATTCACCCTTTTGACCGCTGCAATCTTACCTAAGCCC
26[111] CAGGCAAGCCGGAACAGCTGGAATTATC
26[139] AAATGGCACCGCTTTCAATCAATGGGCGAAACGATAGTTACA
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DOI: 10.1038/NNANO.2010.107


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26[160] TAGCCAGCTTTCATCATCAAGGGATAGGTTCTTATCCGGTAT
26[174] GATAATCGAACCGGTTCGCATAACCAATGAACGGGTAAAATC
26[192] ATCATATGTACGGAAGATTG

3rd strut (grey)
Start   Sequence
28[34]  CAATAAAGAGTAACCGAACGTTGCTAAATTATCTCGGAT
28[55]  CAAAGAAGAGGATTACTCGTAAGTCCGTGAAGAGCAGCACTA
28[97]  AACTAAATTAACACGCAAATGTATCGACATCATCAGAACGAA
28[139] TGCATCATCACCAGCCAACAGAAGATAACGCTTCCATTTTGA
28[160] ACTGGATATTCGGCCTTGCTGGTAATTGAGTAAAAATAGCGA
28[188] CCAGAGGGGGTAATATTAGTAATA
29[26]  CTCAGAGCAGACCCTGTAATA
29[70]  ATATAACTAGTTTGACCATTAATAGTAGTAGCAGTACGGCAT
29[112] ACTTCAACCAGACCGGAAGATTGCTGAATATAATGACTGGCT
29[140] ATTATAGTCAGACGTCCAATACTGCGAATGTTTAG
29[175] GAGGCTTACGACGACACTATCGAATTACCATACATTGCAAGGAG
30[41]  ACATTATTAAAGCTAATTAAG
30[83]  GTAGATTAGTTGATGTCTGGAAGTTTCATTTTGCTGAACCTC
30[125] AAGCGAAATATCGCTAAGAGGAAGCCCGCCTGAAA
30[160] GTCATAAATATTTCAGGTCTTTACCCCGAGCCATA
30[190] GTTTACCAGTTGCAAAAGAAG
31[28]  GCGGGAGTTAGAACCTCAACGAGCAGCG
31[56]  CAATTCTTTCGACATAGAAGTTCAATAGATAATACTATAATA
31[70]  ACATTTCTCATTTGACTCCTGTTATCAAGCACTACGTTTAGC
31[98]  TAGAGCTGCCAGCACGCCTGCGAGGTGAGGCGGTCAAAGCAG
31[112] TCCAACATTTTGATCAGGATGCAGGTGAGTATCTTCCTTTAA
31[140] AATCAAAATTCTGGTCACACGTTATTTA
31[161] CTCAATAGAACTCAAACTAAAAACATCGTAGTGTC
32[55]  AAGGTGCGTTGTTCGCCATCCCGCGGAAACCAGTT
32[83]  TATATTTGCAAATGTAAAGCATCACCTACGAACAATGGAAGA
32[125] TTGCTCCGGTCAGGACCCTTCTGACCACAGAGTGACTGACGC
32[190] CGCCAAAAGATAACCCTC
33[19]  AAATCAAAACCTCATATA
33[42]  TGAGTTTAAGGATAAAAATTTAAGCCTTCTTTGCCATTATCA
33[98]  GAGGTCACGTACGCATCGCTATTGCACT
33[140] GTCTTCAGAGTGAAAATGCTGAATGCAT
33[161] TCTAGCTGAAACGAGAGGCATAGATGCTTTAAACAGCCAGAG
34[48]  TCATTACGAAGGTGCTGGAAAGGCAATTATCATAT
34[69]  GTTTCTGTGGGAAGGGGCGCGAGCTGAA
34[83]  GGTGACCGACCCGTGTTATCTCAACAGTTGAAAGGAGTCAAA
34[111] TGGCATTATGGGTTAAGAGGTCATTTTTGCGGACTGGGGTTG
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sequences_all.txt 2009-09-01

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34[125] ATGATGTGATCGGTAACATCGTTAATGCGCGAACTAGGTGGC
34[153] AGATGATCAGCGATGTTCAGAAAACGAGAATGATATCGCGTC
34[181] AAACATTGCTGATACCGTTTGGGTTGAGAGCGCTC
35[19]  TAAGCGTATTATTAATTT
36[186] ATCACTTGCCTGTTACTGTTTCTT
37[42]  TTTTGTTTTAGCAAAAATCGGTTTTAACATCCAATAAATCCC
37[84]  AAATATAGTACGGTTCCCAATTCTGCTGTAGCTCAACATGAG
37[119] GCGTAAGAATACATAAAAGATGTTTTAATTTGACT
38[83]  CCCTCAATCAATATCTGGTCGATTAGACTTATACAGGCAAGG
38[125] ACAGACAATATTTTTGAATCAAACAGTGAATTTTAAATATGC
38[139] CATTGGCGAAATCGTCTGAAATGCATTGCAACAGG
38[153] CCAGCGAACCAGTAAGAGCAAAGCGGAT
38[188] TGTAGCAATACTTCATCACGCGGCCACC
39[25]  CGGAATTATCCATCAATATAATC
39[42]  TCCTGATATCGGAACAAAGAAACCACCA
39[56]  GATTAGAGCCAGTTGGCAAATAAAATAT
39[98]  AAGATAAAAGGCTATTAGTCTCCATTAA
39[161] AAAAAAGTCTGTCCTTATCCAGAACAATATTACCG
40[55]  ACAACTCAGATGATGCAACGATTAAATCTATTTCAACCAAAA
40[69]  CTTTAGGAGTTAATCAAACAAACTAGAT
40[97]  CCACCTTGAGGAAGTAGTAACAAAAATCGTCAATACGAACGA
40[111] AAATACCTCAAAGGGCTGAGATACAAAC
40[139] CGCTCTAGCCCTAATTTGTAAAGATAGAATTAGAGAGCTTCA
40[160] ATGGAAATACCTACGTACTCAAAGGGACAACATTGAATCCCC
40[174] GAGTAAATATTATCAGTAGAAAGAGCAATAAAAACCAGAATC
40[193] TATAATCAGTGAAAATTAACC


Six-helix-bundle Prism (p7560):

Left and right End staples (blue)
Start   Sequence
0[41]   ATTACCGCCAGCCATTGCAACAGGAAAAACGCTCA
0[188]  TGCAGCAAGCGGTCCACGCTGGTTTGCCCCAGCAG
1[7]    TCTAAAGCATCACCTTGCTGAACGAAGAACTCAAA
1[154]  TCCGAAATCGGCGCCTCCTCACAGTTGAGGATCCC
2[41]   CTTGCCTGAGTACTCAAATATCAAACCCTCAATCA
2[188]  GTGCCTGTTCTTCGCGTCCGTGAAAAATCCCTTAT
3[7]    CTGAATAATGGAAGGGTTAAACCGTTGTAGCAATA
3[154]  TGTTGTTCCAGTTTGGAACGCTTACGGCTGGAGGT
4[41]   GTCCATCACGCAAATTGAACCTACCATATCAAAAT
4[188]  CCATCCCACGCAACCAAAGAGTCCACTATTAAAGA
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DOI: 10.1038/NNANO.2010.107


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5[7]     AATTAATTTTCCCTTAGAATCCTTGAAAACATAGC
5[154]   AAATGCTGATGCAAATCCAATCGCAAGACAAAGAA
6[41]    ATAGCTCTCACGGAAAAAGAGACGCAGAAACAGCG
6[188]   TAATCGTAAAACTAGCATGTCAATCATATGTACCC
7[7]     TAATTTAGGCAGAGGCATTTTCGAGTCCCGGAATT
7[154]   AAAACAGGAAGAAAGGATAAAAATTTTTAGAACCC
8[41]    GCCATGTTTACCAGCCAGTAATAAGAGAATATAAA
8[188]   GGGAGAAGCCTTTATTTCAACGCTTGTATAAGCAA
9[7]     ATCGAGAACAAGCAAGCCGACGGATAACCTCACCG
9[154]   AAATTCGCATTAAATTTTTAATATAATGCTGTAGC
10[41]   TGGAGCCGCCACGGGATTTTTATTTTCATCGTAGG
10[188]  TAGAGCTTAATTGCTGGTTAAATCAGCTCATTTTT
11[7]    GAAGCGCATTAGACGGGAGAATTAACTGAACACCC
11[154]  CGAAGCCCTTTTTAAGAAAAGTAAGCAGATAGCCG
12[41]   AGAGGGGGTAATAGTAAAATGTTTAGACTGGATAG
12[188]  AAAATACGTAATGCCACTACGAAGGCACCAACCTA
13[7]    TTGAGGGAGGGAAGGTAAATATTTAAAAACCAAAA
13[154]  CTAAAACACTCATTCGAGGTGAATTTCTTAAACAG
14[41]   ACCAGACGACGAGACGGAAATTATTCATTAAAGGT
14[188]  TTGTATCGGTTTATCAGCTTGCTTCTTTGACCCCC
15[7]    TGCCATCTTTTCATAATCAACGAGGCATAGTAAGA
15[154]  CGGAGATTTGTATCATCGCTACAACGCCTGTAGCA
16[41]   AACGCCAAAAGGAATTAAATCACCGGAACCAGAGC
16[188]  CGTCACCAGTACAAACCTGATAAATTGTGTCGAAA
17[7]    CAGTAAGCGTCATACATGGCTTTTGATGATACAGG
17[154]  TTAAGAGGCTGAGACTCCTCAAGAGAAGGATTAGG

Core Strut I, II, and III (red)
Start    Sequence
0[55]    ATATCCATAGATTAGAGTAAAAGAGTCTCTTCTTTGATTAGT
0[97]    TCAGAGCATCATAGGTAGCGGTCACGCTCGCCGCTACAGGGA
0[139]   GGAGCCCTTGGGTTGTCAAAGGGCGAAAAACCATCACCCACC
1[70]    GTAGCACGTATAACAAACAGGAGGCCGAGTCAATAACCACCA
1[112]   GGGCCGTAAAGCACAGAGCTTGACGGGGCTTTTTATATCAGG
2[83]    GTTGCTTTGACGACCGCCGCGCTTAATGGCGCGTAGTGAATT
2[125]   TGGGGTCGAGGTAATGGCCCACTACGTGAACCGTCACCTCCG
3[56]    GTTTTTATAATCCCGCCAGAATCCTGAGGGTAGACAGGAACG
3[98]    GCGGGCGCTAGGGAGGGAAGAAAGCGAAAGCGTGGCGAGAAA
3[140]   GAGATAGGGTTGAGAAATCAAAAGAATAAATTTGATGGTGGT
4[69]    CAAGTGAGGCCACCAGACGCTGAGAAGATTAAAGGGATTTTA
4[111]   GCGCGCTGGCAAGTGTCTGAGAGACTACAAAGCCGGCGAAAA
4[153]   ACGTGGACTCCAACATATAACTATATGTGCGAAAATCCTGAG
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5[42]   GATAGCTGAACAATCTATCGGCCTTGCTAAGTAATAACATCA
5[84]   TATCAAAGGGAGCTGTGCTTTCCTCGTTAGGCGCGTACTATG
5[126]  GCTTAGGCCGATTTTAAATCGGAACCCTGCAATCAAGTTTTT
6[55]   TCCGTGGAGTCAGACAAGCTTTCAGAGGGAAACAATCGGCCG
6[97]   TTACGCCCAAGAATCTCCAGCCAGCTTTAAGCGCCATTCGAC
6[139]  GTAATGGAAATAGCGCCATCAAAAATAATCAACATTAAATCG
7[70]   CGGAAGGGCGATCGGAAAGGGGGATGTGTAATATCCGCTTCT
7[112]  GCTTCTCCGTGGGACACGTTGGTGTAGATAATAAGCTGGCCT
8[83]   CGCAACTGTTGGCCCCGGAAACCAGGCACCGGCACAGAGAGA
8[125]  CAACCCGTCGGACAGTAGCCAGCTTTCATTCGCGTAGCAAGA
9[56]   ACGTTGTAAAACTGAGGGTTTTCCCAGTTTTAAGTTGGGTAA
9[98]   AGTATCGGCCTCCTGTTTGAGGGGACGAGCAACCGTGCATCT
9[140]  TTAATATTTTGTTAATATTTAAATTGTAGAAGAAAAGCCCCA
10[69]  GGGACGGCCAGTGCGGGTAATTGAGCGCCTGCAAGGCGATTC
10[111] TCAGGAAGATCGCATGAGTTAAGCCCAATGGGCGCATCGTTA
10[153] TAACCAATAGGAACAATAGCTATCTTACCGGTTGATAATCCC
11[42]  TGAACAATGAAGGGTGTGAGAGATAGACCAGAAACGTACAGC
11[84]  TAACCCAAGCTGGCGTGCGGGCCTCTTCCGCCATTCAGGCTG
11[126] AACAATGGATAGGTACAAACGGCGGATTAAGTGAGCGAGTAA
12[55]  AAAGAAGTGGTAATTAATGCAGATACATGCAACACTATCATG
12[97]  TGGGAAGCCCGTATAAACACCAGAACGAAACTTTAATCATCA
12[139] ACCTTCATTATTCTCATGTTACTTAGCCACCGAACTGACCGC
13[70]  AGAGAACTGGCTCATACGTTAATAAAACTCAGTGCATTGGGC
13[112] ACGGTGTACAGACCTAATCTTGACAAGACCCTGCCGGCGCAG
14[83]  TATGCGATTTTAGTGATGGTTTAATTTCGTAGTAACTTGAGT
14[125] GGACAGATGAACGTTCAATCATAAGGGAGGAACGATATTTCG
15[56]  AGATTTAGGAATGAAGAAAGATTCATCATGCAACATTATTAC
15[98]  GTGAATAAGGCTGGAACAAAGCTGCTCAACTTACCCAAATCA
15[140] GAAACAAAGTACAAAGCGATTATACCAAGCCAAAAGAATACA
16[69]  TTACCACATTCAACAAGTTTTAACGGGGGAACTAACGGAACA
16[111] ACTGCCCTGACGAGAAACAGTTAATGCCACCGGATATTCAGT
16[153] TCCGCGACCTGCTCGAAACATGAAAGTAAAACGAAAGAGGTG
17[42]  AGTGTACTTTTGCCTAGCGAGAGGCTTTGTTAACCCTCGTTT
17[84]  AACAGTGAAAAATCTTATACCAGTCAGGTTTGTGAATTACCT
17[126] GAACCTATCAAGAGAGGCGCATAGGCTGGCAACTTTGAAAGA

Clamps 1-9 (dark orange, orange, light green, green, dark green, turquoise,
grey, purple, pink)
Start   Sequence
18[55]  TATCTTTAGCCGCCAGGAGGTTGAGGCATAATTTTGCGGAAC
19[28]  GTAGAAGGAGCGGACTAACAACTAATAGCGCCACCCGATTGG
20[41]  AAAGAAACCACCATTGCCCGAACGTTATGGTCAGAAGAACCA
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DOI: 10.1038/NNANO.2010.107


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21[14]   CGTATTAATTCACAACCACCCTCAGAGCATTAGAGTTTAGAA
22[27]   CCTTGATAATCCTTTAGACTTTACAAACTTGAGGACCGTCAA
23[42]   CCACCAGAGGAGCAATTATCATCATATTTCATTTTAAAAGTT

24[55]   TGAATATAAGTCCTTAATATCCCATCCTAGATGATAATTACA
25[28]   ACATTTGAATTACCCAGTACCTTTTACAGCCTGTTGAGCATG
26[41]   TTTAACAATTTCCAACCTGAGCAAAAGAAATTTACTATCAAC
27[14]   TATTCATCAATCAACTAATGCAGAACGCTCGGGAGTTTGAAT
28[27]   TAGAAACTTCAATTAGTTACAAAATCGCTGATTGCAAACAAT
29[42]   AATAGATACAGTAATTTTTTAATGGAAACAAAATTGAAACAA

30[55]   TAAGAACCCAATGACAGCACCGTAATCATCTTTCCAAACAGC
31[28]   GTCCCAATCCAAATGTTTTAGCGAACCTTTAGCAACAGAATC
32[41]   CATATTATTTATTGAACGCTAACGAGCGGTAGCGAGGCCGGA
33[14]   TCCTGAACCTTTAGTAGCACCATTACCACCCGACTAAGATTA
34[27]   AAGTTTGTCTTACCCTATTTTGCACCCATTAAATCTGCGGGA
35[42]   AACGTCAGCGAGGCAAGAAACGATTTTTACAAAATAGAGCCT

36[55]   CCGCTCAAAACAACCAGCGGAGTGAGAATCGTGCCGCGGGGA
37[28]   GAGTATTGGGCGCCACACAACATACGAGTTTTCTGGAACAAC
38[41]   GAGGCGGTTTGCGCAGTCGGGAAACCTGTAGAAAGTATGGGA
39[14]   ACTGCCCATTGCGACGTTAGTAAATGAACCGGAAGAATGAGT
40[27]   TAAAGGAGCTTTCCTAACTCACATTAATGGTGCCTCATAAAG
41[42]   TTTTGCTCAATTCCAGGGTGGTTTTTCTCCAACGCAGCTGCA

18[118]  GCGGTATTATTCAAATAAATTAATGCCGGCAGCCACGATCCA
19[91]   CATGCGCGCCTGTGGTCACTGTTGCCCTGTCAAATTAGCTAT
20[104]  GCGCAGTGTCACTCATGCCGGGTTACCTGAGAGGGCACCATC
21[77]   GTTAACGAGATCTAAAAGGCCGGAGACAGCGGCTGTCATAAA
22[90]   TTTTGAGGCATCAGCCTTACACTGGTGTTTGCTCGGTAATGG
23[105]  AATATGAGAGCCGGCACTCTGTGGTGCTCATCAGAGCGGTGC

24[118]  CAGTTGACGCTTTTCCCTCAGCAGCGAATACTAATCATACAG
25[91]   ATATTAGCAAAATTTTCTGCGAACGAGTGGCTTGCATCGGAA
26[104]  GCAAGGCAAAGAAAGGTGGCATCAATTCAGACAGCAGGGAGT
27[77]   GCGCGAGAGCAACGTATTCGGTCGCTGAAGATTTAATGGTCA
28[90]   CGAGGGTCTGAAAACCTGTTTAGCTATATTCGCAAGTTTGAC
29[105]  TAAAGGCTTCCCAAAAGCAATAAAGCCTAATAAATAGTAGTA

30[118]  TTCACCAAGGTTTATCAGAACCGCCACCGCGAACTAATACCG
31[91]   AAGCAGAAGATAAAGACCAGTAATAAAAAGGTGTACCGCCAC
32[104]  AACGAACCACCAAGTTAGTCTTTAATGCCTCAGAATCACCGT
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33[77]  TTTTTGAGCCACCAGTATAGCCCGGAATGGGACATTGACCTG
34[90]  CCTCAGAATGGCTACGTAAGAATACGTGACCCTTCTCTGGCC
35[105] ACTCAGGGTCACACACAGAGGTGAGGCGCATTAAAGATAGCC

18[181] TGGTTTGGCCTTTAAAAGTTAAACGATGTTTCGTCCACATCC
19[154] TAGTGCCGGACTTGGACCGTGTGATAAAGTAAAAACCGTTCC
20[167] TCATAACGGAACGAAACGCGGTCCGTTTCTGATTGAAGCCGC
21[140] TATACAAATTCTCAAAAAGCCTGTTTAGGGAATCATTAAATA
22[153] GGTACCAGTATAAACATAAAAAAATCCCTAAGGCGTAATTAC
23[168] ACAGGCGAAATACCTAGAACGTCAGCGTGCCAGAGTCGTCGC

24[181] CTGGCATTCAGGTCATTATAGTCAGAAGAGCCCGACGAGCTT
25[154] CAGACCGGAAGCAAACTCCTTATTACGCAGAATGAGATTGCA
26[167] CAAAGCGAACCAACAAAGATTAAGAGGACAAAGCGCCATAAA
27[140] GGAATAAGTTTAAAATATAAAAGAAACGATACATATAGCAAA
28[153] TCTTTTGTCACAATCAGTTCAGAAAACGAGTATGTAAGGTGG
29[168] TCAAAAAGATTAAGACTCCAACAGGTCATTTAATTAAGACTT


Twelve-helix bundle kite (p8634):

1st strut core (grey)
Start   Sequence
0[62]   TTGCTTTGAACCGCCACCCTCAGAACCGTGAGGAAAATAATA
0[104]  AGTTGGCTCATTTTCAGGGATAGCAAGCTTGCTGGGTAACAG
0[146]  CTGAGTATAACACTGAGTTTCGTCACCACAAGTTTGAAACCC
0[188]  GGCCCACGCATTCCACAGACAGCCCTCACCGGAAGGCAGCTA
0[281]  TCTAATGAAGACAAATTGGGATTTTGCTA
1[14]   GGTGTATCACCGTACTCAGGACGCAGAGTTGGAGTGTACTGG
1[42]   TACCGCCACCCTCAGAATACCAACAATTTTTTAGGATTAGCG
1[84]   CAGAGCCACCACCCAAATCAATTTACATAAAAAGAAACCACC
1[126]  GAACCCATGTACCGGAAGAACAGGAAGGTGAAGCGTAAGAAT
1[168]  CTACAACGCCTGTATACGTGAGCCAGCTGCGCGCTTAATGCG
1[210]  CGTAACGATCTAAACAATTCCGCCCACGAGTGAGACGGGCAA
1[238]  CCAGACGAAATGACTCCCAAAAGGAGCCTTGATACCGATAGT
1[252]  ATGAATTTTCTGTACCCCATTGTATCGGTTTATCA
3[105]  ATATCATACCTCAAATATCAAACCAGATGAATATA
3[147]  CATCATGGCAATACTTCTTTGATAAAAATCTAAAG
3[189]  TCAGGTAACGTCAAAGGGCGAAAGTCCATCACGCA
3[231]  AAATTATCATGGTCATAGCTGTTTCCACTATTAAA
2[83]   CAGTAACAGTACCTATTGCGTAGATTTTAAGGAATCCACCCT
2[125]  CATCACCTTGCTGAATCACGCTGAGAGCATCGGCCCCAATAG
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sequences_all.txt                                                 2009-09-01
2[167]   AATTAACCGTTGTAGGTGAGGCCACCGACCCAAATGTACAAA
2[209]   GAACGTGGACTCCAAATGTTGTTCCAGTATACGAGTAGTTAG
2[251]   CTCGAATTCGTAATACTCGCTACGGCGGGTGCGAGTTAGTAA
4[76]    GAAATCTAAAATATACCATATCAAAATTATTTGCA
4[118]   AGTGCCCAGAACAAACAGAGGTGAGGCGGTCAGTA
4[160]   ATCAGGTCGAGGGCAGGAACGGTACGCCAGAATCC
4[202]   TTGAGGTGTAAAAAAAATCCCTTATAAATCAAAAG
4[275]   AATCCTCGCAAGATGATAAATGCACTT
5[84]    CGTAAACCAGCAGAAGATAAAAAATACCTCAATCA
5[126]   TTAACTAAAGGGATTTTAGACTAAACAGGTAATAA
5[168]   TGAGAGGTTCCGAAATCGGCAAATCCTGCCGTCTA
5[210]   AATAGGGTGGAAACGATACTTTTATTATCTGTGTG
5[238]   CTGTACAAAACATATTTTATCTGAACCGCTCCAAAAACAACT
7[9]     TCCAGTAAGCGTTTATTCTGA
7[56]    ATTGTTTCCGAACGCGACAACGAAGTATTAGACTTTAAGTTT
7[70]    TAGGAGCCAGATGATGGCAATTCATCAATATAAGC
7[98]    ATCGCCAAGTAATATGGCAGAATCGTCTGAAATGGATCAATA
7[112]   TACCGCCTCTTTAATGCGCGAACTGATAGCCCTTC
7[140]   AGAGCGGAGGGCGCGAAGAAACGGCGAACGTGGCGAGTGGAA
7[154]   TAAAGCAGCACGTATAACGTGCTTTCCTCGTTATT
7[182]   CAGCAGGGGGAGAGGCATTAAAGTCGGGAAACCTGTCCCGAT
7[196]   GGGTGCCGTTGCAGCAAGCGGTCCACGCTGGTTAT
7[224]   TTCACGTGGCTTGCCATAACCACAATGACAACAACCATGCGT
6[90]    ATATTCCTGATTATACGAGCGGAATTATCCAACAGAAATAAA
6[132]   TGAATGGCTATTAGAGGCACAGACAATAATACCGCCTGCAAC
6[174]   GGTTGCTTTGACGACTACAGGGCGCGTAGTAGTGTTTTTATA
6[209]   TGAGAGATAGATTGCCCTTCAACCCCGAGATAGGG
6[237]   AAAGGAATTGCGAATAATAGCCTGGCCC
8[41]    GGGTTTGATACACGGAGGCTGAGACTCCTCAAGAG
8[83]    AGAAGTAACAACATTGAGTAACATTATCATTTTGC
8[125]   ACGTGCCATTGCCAACAGAGATAGAACCCTTCTGA
8[167]   CCGCTAAATCGGGCCGCTGCGCGTAACCACCACAC
8[209]   CAGCTATGAGTGCAGCCAGGGTGGTTTTTCTTTTC
9[49]    AAGGAATTAATTTTAAAAGTTCCTTTGCGGATCTT
9[91]    GGAACAGGGACATTCTGGCCACACGACCTTAATAT
9[133]   CCTGAGCAAGTGTAGCGGTCAGGGCGCTGATGCCG
9[175]   CCGCCGGTTTGCGTATTGGGCACGCGCGCGGCCTG
9[217]   ACCAGGGAGTTAAAGGCCGCTTCGCTGATGAAAATTGCAAAAGCCCTCT
11[7]    CAGTTAATGCCCCCTAACAGTGCCCGTA
11[77]   GATTAGAGCCGTTACAGTTGACAGGTTTAACGTCCGAACGAACAAAAAC
11[119]  GAAAAACGCTCAAATCAAACTCAGCAGCAAATGTAGAGGCCGTTGAATC
11[161]  TAAAGGGAGCCCGTACCATCAGTAAAAGAGTCTAATTTGATGCTTGCCC
```

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11[203] ACTCACATTAATTCACACAACTTGGAACAAGAGTCCACGAGTCCATTTT
10[83]  GATAATACATTTGAGGATTTATCGTATTGGCCTGA
10[125] ATACCTACATTTTGACGCTCATTCACCATATGGTC
10[167] TTAGAGCTTGACGGGGAAAGCGCGAAAGTTCTTGC
10[209] TGCGCTCACTGCCCGCTTTCCTGAATCGCAGCGAT
10[237] TGCGCCGGATATATTGGTTATCCGCTCAGTTTTGTCGTCTTT
10[272] GAGGTGAATTTCTTAAACAGCTTTAATTCTGCAATGTTTTGTTACCGAG

2nd strut core (black)
Start   Sequence
12[62]  CGCCGCGATTAGTTGCTATTTTGCACCCGCTTTATATGTTCA
12[104] GACGTTGCTTACCAACGCTAACGAGCGTATTTTTGCTCATCA
12[146] GTTAATAAGTTACAAAATAAACAGCCATAATTAAGCAGTACC
12[188] TCATACAAAGAAACGATTTTTTGTTTAAGACTATTGGTTAAG
12[281] GGAACAACATTATTACACGGGAGAATTAAC
13[14]  GAACCTCCCGACTTGCGGGAGCGCTAACGTAAAAATAATATC
13[42]  AGCCTTAAATCAAGACCAGGACAGCGCACAATCATTACCGCG
13[84]  ATTTTATCCTGAATTAAAACGCGAGTAACGAGATGAACGAAG
13[126] GAGCCTAATTTGCCTTTTGTTGATAAAATGCATCGTAACCGT
13[168] ATCCCAATCCAAATGGCAAGGGACCGGACCCCGGAGACAGTC
13[210] AATGAAAATAGCAGCAAAAATACCCAAAAGTTAGAGCTTAAT
13[238] ATAACATGAGATTTTAAAATAGCAATAGTACCAGAAGGAAAC
13[252] GGGAAGCGCATTAGAGGTAGAACCGAAGCCCTTTT
15[105] TCCCAAAATTAAGTTGGGTAACGAACACCATCGAT
15[147] AATTGATGGAAGATTGTATAAGCGCGAAAGGGGGA
15[189] ATCCAAGTTCTACTAATAGTAGTTGATAATCAGAA
15[231] CGAGAGACAAATGCTTTAAACAGGGCGCGAGCTGA
14[83]  TGTGCTGGAACTGCCGCGCAGACCTTTTGTGCCAAAGCTACA
14[125] TGTGCTGCAAGGCGATGCCTCTTCGCTAGCATTAACTTTCCA
14[167] AAGCCCCAAAAACAAACATGTCAATCATTTAGCAAATTATTT
14[209] AAAGGTGGCATCAATCCTGTTTAGCTATTTACCCTCGTCAAA
14[251] CATTGAATCCCCCTATAGAAGTTTTGCCATCAGTTAAAAACA
16[76]  TTTGACATTCACTTGTGAAGCGGCAGAGCAGGCAA
16[118] TGCGGCAGCTCACTGCCATTCAGGCTGCGCAACTG
16[160] ACTAGAGCCTCATCTGGAGCAAACAAGAGAATCGA
16[202] ATAACAGAAGCAATATTTAGTTTGACCATTAGATA
16[275] ACGATAAAAATAAAATGTTTAGACTGG
17[84]  TGCATAGGCAAAGCGCCATTCTCTGGTGAGGGTTT
17[126] TTGGGTCATTGCCTGAGAGTCTACAAAGATATTTA
17[168] TGAACTTCTGCGAACGAGTAGAACAGTTCATTAAC
17[210] CATTTTAACGCCAAAAGGAATAACTAATCAGAAAA
17[238] CATAGTAAGAGCAAGGCTTTTGCAAAACAGAGCAAATATCAG
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DOI: 10.1038/NNANO.2010.107

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19[9]	GCCTGTTTATCAAGTACCGCA
19[56]	ACAGAGAGAACCACACACAGCTCAGAAATAGAAGAATCTAAT
19[70]	TGCGTATGTTGCCAGGAGGATCTGGAACTTATCGA
19[98]	CCGGCACCAAACGGCAACCCGATCAACATTAAATGTGAGATG
19[112]	TAACCAAGCCTCAGGAAGATCGCACTCCAGCCATG
19[140]	TTTGAGAAATGCAAATTTTTACCTTTATTTCAACGCAGTCTG
19[154]	TAAAGCTTGATAAATTAATGCCGGAGAGGGTAGGA
19[182]	TCATTCCGAGAGTAAGCAAACGAGCTTCAAAGCGAACACCCT
19[196]	GATTGCAATATGCAACTAAAGTACGGTGTCTGGAT
19[224]	TAAGCCCATTACGCAGAACTGACGCAATAATAACGGAAGACT
18[90]	TCGGACTTGTGCAATATGGTCGTTCAGGCCGACGACTGGGGA
18[132]	CGACGACAGTATCGTATGCCAGTTTGAGGGAAGGGCGATCGG
18[174]	TCAACCGTTCTAGCAAACCATCAATATGAAGGTAATCGTAAA
18[209]	GTTTTAATCAATATAATGCTGCACGCAAATGGTCA
18[237]	AGAGATAACCCACAAGAATGCTCAACAT
20[41]	CCCAAGAACAAGATAAGCCGTTTTTATTTTCATCG
20[83]	ACGCCACCAACAGCCATTGTTGTGAGTGTGGCGAT
20[125]	GCATCGGAACGCCCATAGGTCACGTTGGTGTAGAT
20[167]	AAATCATCGGTTTAGTAAAGATTCAAAAGGGTGAG
20[209]	TGCTGAAAAAGATCGATAAGAGGTCATTTTTGCGG
21[49]	TAGGAGGCTATATCTGCCACTGCCGCCTGGCCTCA
21[91]	CCGATGATTGACCGTAATGGGGTGGGAACGTTTTT
21[133]	GGGCGCCTGAGTAATGTGTAGTATTTTAGAGAGCA
21[175]	AAAGGTTTAATTGCTCCTTTTAGGATTAATAAGCG
21[217]	ATGGCTATGTTAGCAAACGTAACTCCTTAATAATACACATTCTACGAGG
23[7]	TCCTTATCATTCCATCAATAATCGGCTG
23[77]	GGGATTAATGAAAGACGGCCACCATGAATTGGTCCCCGGAAAGTGCTTT
23[119]	AAAATAATTCGCAGAAAATTCTTACGCCAGCTGAAGCTATCAGGCTATT
23[161]	AAAAACATTATGCACAAAGAAATGTACCCCGGTAGGATTCCCATAAGTT
23[203]	AGGAAGCCCGAAATCAGGTCTATTTTCATTTGGTTGCAGATATATGAGT
22[83]	GCAGACATCATTGATTCAGCAAATAAAATATCAAA
22[125]	GCCTTCCTGTAGCCAGCTTTCTCGGATTTTGTCAC
22[167]	GTAATACTTTTGCGGGAGAAGGAACCCTCATAAAC
22[209]	TCAAATATCGCGTTTTAATTCTCCAACAATATAAA
22[237]	CGAGGAAGCATGATAGATGACCATAAATCCTTTACAGAGAGA
22[272]	AAGCAGATAGCCGAACAAAGTCTATCTTAAGATTCAGAGGGGAAATATT

520, Strut I, left (turquoise)

Start	Sequence
3[14]	ATCGTCGCTATTGAATAACCTTGCTTCT
3[63]	ATTCGTTTTTACATCGGGAGAAAGTACATAAATCA
2[41]	ATATATGTGAGTGAATGAATTACCTTTTAAAATCGGGTTTAG

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```
4[34]   CATTTTAGGCTTTTGAGAGGGTTGATATAAGTATA
5[7]    AAGATGATGAAACACAATTACCTGAGCA
5[35]   AAAATTAATTACGGAAGGGTTAGAACCTTATACTTATAACGG
6[48]   GGATAAGTGCCGTCGATTGCTCAGTACCATATTTAACAATTT
9[17]   GAAAGTATTAAGAACCTACATACATTTCATTTAACATCAAGAAAAC
11[42]  TAATACAAAGTTACTTAATGGAAACACACTGAATAAGTCCTG
10[41]  TAACGGGGTCAGTGCCTTGAGTGCCTATGCAATTAATTTTCCCTTAG

520, Strut I, right (red)
Start   Sequence
2[279]  ACAGGAGAATGGATCCCCGGGTTTATGGCTCGCGGAGTTTCCAGCGGAG
7[252]  ATGAGGAGGATTTATAGATGATTAAACCCAATATT
6[258]  TGAGAATAGAAAGGAATTTTC
6[277]  TTCAACAGTTTCATTAAACGGGTAAAAT
8[251]  AGACTAAAGGCTGGTTTGCGGGATCGTCACCCTCAGGACTAA
8[280]  GCAACGGCTACAGAGGCTTTGAGCAGCGAAAGACAGCATCGGAA

520, Strut II, left (green)
Start   Sequence
15[14]  ATCCTGGGAAGATAAGTTTCTTGTTGTT
15[63]  ATACATTTGGATGAACGGGAAAGCAACGAAGTCCG
14[41]  TGAAGACGGAAACCGGTAAGCGTATTGCGATATTGGTTTTGA
16[34]  GGGAGGAATAAGTCCCGGTATTCTAAGAACGCGAG
17[7]   AAAATCAAAACTCATGTTGAGCTTGAAA
17[35]  TATTACGAAGGTAACTCTCAGGCACTGCCGAAGTGACCAGCA
18[48]  TATAGAAGGCTTATCTTAGCAAGCAAATTTGTTATCTCGGAT
21[17]  CGAGAACAAGCTAAACCAACAATAGAACTGCGACGAGCAGCGTGAG
23[42]  CCATCTAGAACGAGTAAACTGGAAAGAAAGCGAAACAAGTAA
22[41]  TTACGAGCATGTAGAAACCAAAGAACGGAGCTCCTGTTATCAAGCACT

520, Strut II, right (orange)
Start   Sequence
14[279] CCAATACTGCGGAATCGTCATGTAATAGCCAAAATTACCAGCTCAGAGG
19[252] TATGGTTAGCGAGACACTATCATAACCCTCGTTTA
18[258] GTAATTGAGCGCTAGAATTCA
18[279] CACCCTGAACAAAGGCCAAAGACAAAAGGG
20[251] AGAAAAACAATGAGGAAAATACATACATAAAGGTGAATCAAT
20[279] GGAATAAGTTTATTTTGTCACGCAACATATAAAAGAAACGCA

420, Strut I, left (turquoise)
Start   Sequence
3[14]   TAGGTCTGAGAGGAGTGAATTTATCAAA
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3[63]   ATTCGTTTTTACATCGGGAGAAAGATTAAGACGCT
2[41]   GAGAAGAGTCAATAATCCTTGAAAACATAAAATCGGGTTTAG
4[34]   AGAATTAGGCTTTTGAGAGGGTTGATATAAGTATA
5[7]    TGAGTGAATAACCTCAATTACCTGAGCA
5[35]   GTCGCTATTAATGGAAGGGTTAGAACCTTATACTTATAACGG
6[48]   GGATAAGTGCCGTCGATTGCTCAGTACCATTAATTTTCCCTT
9[17]   GAAAGTATTAAGAACCTACATACATTTCATTTTGCTTCTGTAAATC
11[42]  TAATACAAAGTTACAGCGATAGCTTACACTGAATAAGTCCTG
10[41]  TAACGGGGTCAGTGCCTTGAGTGCCTATGCACTACCTTTTTAACCTC

420, Strut I, right (red)
Start   Sequence
2[279]  ACAGGAGAATGGATCCCCGGGTTTATGGCTCGCGGCAGCGATAGCGGAG
7[252]  TGACCCCGGATTTATAGATGATTAAACCCAATATT
6[258]  TGAGAATAGAAAGGAAATCTT
6[277]  TTCAACAGTTTCTATACCAAGCGCGAAA
8[251]  CACTCAAAGGCTGGTTTGCGGGATCGTCACCCTCAACTAAAA
8[280]  AACGAAAGAGGCAAAAGAATACGCAGCGAAAGACAGCATCGGAA

420, Strut II, left (green)
Start   Sequence
15[14]  TACGCATCGCTATAAGTAACTATCGACA
15[63]  ATACATTTGGATGAACGGGAAAGCGGCAGTTAATC
14[41]  GAACAAGACCCGTTGGACTGGTGACCTGGATATTGGTTTTGA
16[34]  ACTGCGAATAAGTCCCGGTATTCTAAGAACGCGAG
17[7]   GGAAACCAGTTTCTTGTTGAGCTTGAAA
17[35]  CTGGGAAGACTCAACTCTCAGGCACTGCCGAAGTGACCAGCA
18[48]  TATAGAAGGCTTATCTTAGCAAGCAAATTTCTGTTATCAAGC
21[17]  CGAGAACAAGCTAAACCAACAATAGAACTGCGTGTTGTTCGCCATC
23[42]  CCATCTAGAACGAGGAAGAGTTTCTGAAAGCGAAACAAGTAA
22[41]  TTACGAGCATGTAGAAACCAAAGAACGGAGTTACGGGGTTGGAGGTCA

420, Strut II, right (orange)
Start   Sequence
14[279] CCAATACTGCGGAATCGTCATGTAATAGCCAAAATGACTTGATCAGAGG
19[252] CGTCACCAGCGAGACACTATCATAACCCTCGTTTA
18[258] GTAATTGAGCGCTAGAATCAC
18[279] CACCCTGAACAAAGGCCATTTGGGAATTAG
20[251] GAATTAACAATGAGGAAAATACATACATAAAGGTGTAAAGGT
20[279] ATATTGACGGAAATTATTCATGCAACATATAAAAGAAACGCA

320, Strut I, left (turquoise)
```

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Start	Sequence
3[14]	AAAACTTTTTCAGACAAGACAAAGAACG
3[63]	ATTCGTTTTTACATCGGGAGAAATGTAAATGCTGA
2[41]	TGCAAATCCAATCGATCTTAGGTTGGGTAAAATCGGGTTTAG
4[34]	TCCGGTAGGCTTTTGAGAGGGTTGATATAAGTATA
5[7]	GTCAATAGTGAATTCAATTACCTGAGCA
5[35]	GTCTGAGAGACTGGAAGGGTTAGAACCTTATACTTATAACGG
6[48]	GGATAAGTGCCGTCGATTGCTCAGTACCATACCTTTTTAACC
9[17]	GAAAGTATTAAGAACCTACATACATTTCATTTTATCAAAATCATAG
11[42]	TAATACAAAGTTACTATATAACTATACACTGAATAAGTCCTG
10[41]	TAACGGGGTCAGTGCCTTGAGTGCCTATGCAATATATTTTAGTTAAT

320, Strut I, right (red)

Start	Sequence
2[279]	ACAGGAGAATGGATCCCCGGGTTTATGGCTCGCGGGAACGAGAGCGGAG
7[252]	TTAGCCGGGATTTATAGATGATTAAACCCAATATT
6[258]	TGAGAATAGAAAGGAAGTTAC
6[277]	TTCAACAGTTTCGCGCAGACGGTCAATC
8[251]	TCCATAAAGGCTGGTTTGCGGGATCGTCACCCTCAGACCTGC
8[280]	GATAAATTGTGTCGAAATCCGCGCAGCGAAAGACAGCATCGGAA

320, Strut II, left (green)

Start	Sequence
15[14]	GATCGGTTTTGTTACGCATCAAAGGAGA
15[63]	ATACATTTGGATGAACGGGAAAGTGCATATGATGT
14[41]	CTGACGCTGGCATTGGGGGTTCAGGATGGATATTGGTTTTGA
16[34]	TCAATGAATAAGTCCCGGTATTCTAAGAACGCGAG
17[7]	ACCCGTTAGTAACTTGTTGAGCTTGAAA
17[35]	GCATCGCTATTAAACTCTCAGGCACTGCCGAAGTGACCAGCA
18[48]	TATAGAAGGCTTATCTTAGCAAGCAAATTTCGGGGTTGGAGG
21[17]	CGAGAACAAGCTAAACCAACAATAGAACTGCGATCGACATCATTAC
23[42]	CCATCTAGAACGAGCAGGTGAGTATCAAAGCGAAACAAGTAA
22[41]	TTACGAGCATGTAGAAACCAAAGAACGGAGAAAAGATAACGCTTGTGA

320, Strut II, right (orange)

Start	Sequence
14[279]	CCAATACTGCGGAATCGTCATGTAATAGCCAAAATCCGTAATTCAGAGG
19[252]	AGCAGCAAGCGAGACACTATCATAACCCTCGTTTA
18[258]	GTAATTGAGCGCTAGATCGAT
18[279]	CACCCTGAACAAAGCAGTAGCGACAGAATC
20[251]	AACCAAACAATGAGGAAAATACATACATAAAGGTGCCAATGA
20[279]	TTAGCAAGGCCGGAAACGTCAGCAACATATAAAAGAAACGCA

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220, Strut I, left (turquoise)

Start	Sequence
3[14]	AACACCGGAATCGAAGGCGTTAAATAAG
3[63]	ATTCGTTTTTACATCGGGAGAAATTGAAATACCGA
2[41]	CCGTGTGATAAATAATATCTTCTGACCTAAAATCGGGTTTAG
4[34]	ATTTCTAGGCTTTTGAGAGGGTTGATATAAGTATA
5[7]	CCAATCGCAAGACACAATTACCTGAGCA
5[35]	ACTTTTTCAAATGGAAGGGTTAGAACCTTATACTTATAACGG
6[48]	GGATAAGTGCCGTCGATTGCTCAGTACCATATATTTTAGTTA
9[17]	GAAAGTATTAAGAACCTACATACATTTCATTTAAGAACGCGAGAAA
11[42]	TAATACAAAGTTACAAATTTAATGGTCACTGAATAAGTCCTG
10[41]	TAACGGGGTCAGTGCCTTGAGTGCCTATGCATAATTACTAGAAAAAG

220, Strut I, right (red)

Start	Sequence
2[279]	ACAGGAGAATGGATCCCCGGGTTTATGGCTCGCGGTTCATCAAGCGGAG
7[252]	GCTGACCGGATTTATAGATGATTAAACCCAATATT
6[258]	TGAGAATAGAAAGGAAGGCTG
6[277]	TTCAACAGTTTCAGAGTAATCTTGACAA
8[251]	GCATAAAAGGCTGGTTTGCGGGATCGTCACCCTCAACCAGGC
8[280]	AGGACAGATGAACGGTGTACAGGCAGCGAAAGACAGCATCGGAA

220, Strut II, left (green)

Start	Sequence
15[14]	ACATCGGGTTGATAGATGATGACCGTAC
15[63]	ATACATTTGGATGAACGGGAAAGCAGCGATGCCAG
14[41]	AGTCTGTAGTGTCAGGATGCTGAATTTCGATATTGGTTTTGA
16[34]	TGAAAGAATAAGTCCCGGTATTCTAAGAACGCGAG
17[7]	TGGCATTCGCATCATGTTGAGCTTGAAA
17[35]	CGGTTTTGTAAAAACTCTCAGGCACTGCCGAAGTGACCAGCA
18[48]	TATAGAAGGCTTATCTTAGCAAGCAAATTTAGATAACGCTTG
21[17]	CGAGAACAAGCTAAACCAACAATAGAACTGCGAAGGAGAGTGAGAT
23[42]	CCATCTAGAACGAGGCGTCGTCTTCAAAAGCGAAACAAGTAA
22[41]	TTACGAGCATGTAGAAACCAAAGAACGGAGGTATTATCTTACTGTTTC

220, Strut II, right (orange)

Start	Sequence
14[279]	CCAATACTGCGGAATCGTCATGTAATAGCCAAAATTCTTTTCTCAGAGG
19[252]	TTTGCCAAGCGAGACACTATCATAACCCTCGTTTA
18[258]	GTAATTGAGCGCTAGATAGCG
18[279]	CACCCTGAACAAAGATAATCAAAATCACCG

```
20[251] CTTATAACAATGAGGAAAATACATACATAAAGGTGTAGCCCC
20[279] TTTCATCGGCATTTTCGGTCAGCAACATATAAAAGAAACGCA


190, Strut I, left (turquoise)
Start   Sequence
3[14]   CTGTTTAGTATCGAATAATTACTAGAAA
3[63]   ATTCGTTTTTACATCGGGAGAAAGTTAAATAAGAA
2[41]   TAAACACCGGAATCATTACCGACCGTGTAAAATCGGGTTTAG
4[34]   TGAAATAGGCTTTTGAGAGGGTTGATATAAGTATA
5[7]    TTTTTCAAATATATCAATTACCTGAGCA
5[35]   TCTTCTGACCTAGGAAGGGTTAGAACCTTATACTTATAACGG
6[48]   GGATAAGTGCCGTCGATTGCTCAGTACCATAATTTAATGGTT
9[17]   GAAAGTATTAAGAACCTACATACATTTCATTTTTTAGTTAATTTCA
11[42]  TAATACAAAGTTACGATAAATAAGGCCACTGAATAAGTCCTG
10[41]  TAACGGGGTCAGTGCCTTGAGTGCCTATGCATATGCGTTATACAAAT


190, Strut I, right (red)
Start   Sequence
2[279]  ACAGGAGAATGGATCCCCGGGTTTATGGCTCGCGGATATTCAAGCGGAG
7[252]  GAACCGGGGATTTATAGATGATTAAACCCAATATT
6[258]  TGAGAATAGAAAGGAAGACAA
6[277]  TTCAACAGTTTCTTACCCAAATCAACGT
8[251]  ATCTTAAAGGCTGGTTTGCGGGATCGTCACCCTCAAAGAGTA
8[280]  CATAGGCTGGCTGACCTTCATCGCAGCGAAAGACAGCATCGGAA


190, Strut II, left (green)
Start   Sequence
15[14]  TTTACATAAACATAGTATTATCTTACTG
15[63]  ATACATTTGGATGAACGGGAAAGATGACCGTACTC
14[41]  AAACATCGGGTTGAGGTGCCAGAGTCTGGATATTGGTTTTGA
16[34]  AGCGAGAATAAGTCCCGGTATTCTAAGAACGCGAG
17[7]   GTTTTGTAAAAGATTGTTGAGCTTGAAA
17[35]  TGCTGAATTTCGAACTCTCAGGCACTGCCGAAGTGACCAGCA
18[48]  TATAGAAGGCTTATCTTAGCAAGCAAATTTCGTCGTCTTCAC
21[17]  CGAGAACAAGCTAAACCAACAATAGAACTGCGAACGCTTGTGAAAA
23[42]  CCATCTAGAACGAGTAGTGTCAGATGAAAGCGAAACAAGTAA
22[41]  TTACGAGCATGTAGAAACCAAAGAACGGAGTTGCTGATACCGTTTAGC
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190, Strut II, right (orange)

Start	Sequence
14[279]	CCAATACTGCGGAATCGTCATGTAATAGCCAAAATAGCCACCTCAGAGG
19[252]	GAACCAGAGCGAGACACTATCATAACCCTCGTTTA
18[258]	GTAATTGAGCGCTAGACACCG
18[279]	CACCCTGAACAAAGACCGGAACCGCCTCCC
20[251]	AAAATAACAATGAGGAAAATACATACATAAAGGTGCATAATC
20[279]	TATTAGCGTTTGCCATCTTTTGCAACATATAAAAGAAACGCA

170, Strut I, left (turquoise)

Start	Sequence
3[14]	TATACAAATTCTGAGTTTAGTATCATAT
3[63]	ATTCGTTTTTACATCGGGAGAAAGGAATCATAATT
2[41]	ACTAGAAAAAGCCTATAGGCGTTAAATAAAAATCGGGTTTAG
4[34]	AAATATAGGCTTTTGAGAGGGTTGATATAAGTATA
5[7]	TAATTTCATCTTCTCAATTACCTGAGCA
5[35]	GGTTTGAAATACGGAAGGGTTAGAACCTTATACTTATAACGG
6[48]	GGATAAGTGCCGTCGATTGCTCAGTACCATCGACCGTGTGAT
9[17]	GAAAGTATTAAGAACCTACATACATTTCATTTGACCTAAATTTAAT
11[42]	TAATACAAAGTTACAGAATAAACACCCACTGAATAAGTCCTG
10[41]	TAACGGGGTCAGTGCCTTGAGTGCCTATGCTACCAGTATAAAGCCAA

170, Strut I, right (red)

Start	Sequence
2[279]	ACAGGAGAATGGATCCCCGGGTTTATGGCTCGCGGCGTAACAAGCGGAG
7[252]	AAATCAAGGATTTATAGATGATTAAACCCAATATT
6[258]	TGAGAATAGAAAGGAATACCC
6[277]	TTCAACAGTTTCAAGCTGCTCATTCAGT
8[251]	TTCATAAAGGCTGGTTTGCGGGATCGTCACCCTCACCGGATA
8[280]	TCAAGAGTAATCTTGACAAGAAGCAGCGAAAGACAGCATCGGAA

170, Strut II, left (green)

Start	Sequence
15[14]	ACCGTTTAGCTGTATACATAAACATTGC
15[63]	ATACATTTGGATGAACGGGAAAGGGTTGAGTATTA
14[41]	TCTTACTGTTTCTTGGGATGATGACCGTGATATTGGTTTTGA
16[34]	TGTCAGAATAAGTCCCGGTATTCTAAGAACGCGAG
17[7]	TGTGAAAATGCTGATGTTGAGCTTGAAA

```
17[35]   TCACAGCGATGCAACTCTCAGGCACTGCCGAAGTGACCAGCA
18[48]   TATAGAAGGCTTATCTTAGCAAGCAAATTTCAGAGTCTGTAG
21[17]   CGAGAACAAGCTAAACCAACAATAGAACTGCGATTTCGCGTCGTCT
23[42]   CCATCTAGAACGAGACTCAAACATCGAAAGCGAAACAAGTAA
22[41]   TTACGAGCATGTAGAAACCAAAGAACGGAGAAACGACATACATTGCAA


170, Strut II, right (orange)
Start    Sequence
14[279]  CCAATACTGCGGAATCGTCATGTAATAGCCAAAATCCCTCAGTCAGAGG
19[252]  ACCGCCTAGCGAGACACTATCATAACCCTCGTTTA
18[258]  GTAATTGAGCGCTAGACCGGA
18[279]  CACCCTGAACAAAGAGCCGCCACCCTCAGA
20[251]  CACCAAACAATGAGGAAAATACATACATAAAGGTGCCAGAGC
20[279]  TCATAATCAAAATCACCGGAAGCAACATATAAAAGAAACGCA


160, Strut I, left (turquoise)
Start    Sequence
3[14]    CTTACCAGTATAGAATATGCGTTATACA
3[63]    ATTCGTTTTTACATCGGGAGAAATTACTAGAAAAA
2[41]    GCCTGTTTAGTATCATTAAGAATAAACAAAAATCGGGTTTAG
4[34]    TTAAATAGGCTTTTGAGAGGGTTGATATAAGTATA
5[7]     TTCTGACCTAAATTCAATTACCTGAGCA
5[35]    ACCGACCGTGTGGGAAGGGTTAGAACCTTATACTTATAACGG
6[48]    GGATAAGTGCCGTCGATTGCTCAGTACCATATAAATAAGGCG
9[17]    GAAAGTATTAAGAACCTACATACATTTCATTTTAATGGTTTGAAAT
11[42]   TAATACAAAGTTACCCGGAATCATAACACTGAATAAGTCCTG
10[41]   TAACGGGGTCAGTGCCTTGAGTGCCTATGCAAGCCAACGCTCAACAG


160, Strut I, right (red)
Start    Sequence
2[279]   ACAGGAGAATGGATCCCCGGGTTTATGGCTCGCGGCTGCTCAAGCGGAG
7[252]   AACAAAGGGATTTATAGATGATTAAACCCAATATT
6[258]   TGAGAATAGAAAGGAAAACGT
6[277]   TTCAACAGTTTCTTCAGTGAATAAGGCT
8[251]   AAATCAAAGGCTGGTTTGCGGGATCGTCACCCTCAATTACCC
8[280]   TCTTGACAAGAACCGGATATTCGCAGCGAAAGACAGCATCGGAA


160, Strut II, left (green)
```

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Start	Sequence
15[14]	TGAAACGACATATATTGCTGATACCGTT
15[63]	ATACATTTGGATGAACGGGAAAGTATCTTACTGTT
14[41]	TCTTTACATAAACAGGGTACTCAAACATGATATTGGTTTTGA
16[34]	TGACCGAATAAGTCCCGGTATTCTAAGAACGCGAG
17[7]	CTGAATTTCGCGTCTGTTGAGCTTGAAA
17[35]	GCCAGAGTCTGTAACTCTCAGGCACTGCCGAAGTGACCAGCA
18[48]	TATAGAAGGCTTATCTTAGCAAGCAAATTTAGTGTCAGATGA
21[17]	CGAGAACAAGCTAAACCAACAATAGAACTGCGGTCTTCACAGCGAT
23[42]	CCATCTAGAACGAGCGGGTTGAGTATAAAGCGAAACAAGTAA
22[41]	TTACGAGCATGTAGAAACCAAAGAACGGAGCATTGCAAGGAGTTTATA

160, Strut II, right (orange)

Start	Sequence
14[279]	CCAATACTGCGGAATCGTCATGTAATAGCCAAAATCGCCACCTCAGAGG
19[252]	TCAGAGCAGCGAGACACTATCATAACCCTCGTTTA
18[258]	GTAATTGAGCGCTAGACTCCC
18[279]	CACCCTGAACAAAGCTCAGAACCGCCACCC
20[251]	ACCGCAACAATGAGGAAAATACATACATAAAGGTGCACCGGA
20[279]	AATCACCGGAACCAGAGCCACGCAACATATAAAAGAAACGCA

150, Strut I, left (turquoise)

Start	Sequence
3[14]	TAAAGCCAACGCGATACAAATTCTTACC
3[63]	ATTCGTTTTTACATCGGGAGAAAAAGCCTGTTTAG
2[41]	TATCATATGCGTTAATCACCGGAATCATAAAATCGGGTTTAG
4[34]	ATAAATAGGCTTTTGAGAGGGTTGATATAAGTATA
5[7]	AATTTAATGGTTTGCAATTACCTGAGCA
5[35]	TGATAAATAAGGGGAAGGGTTAGAACCTTATACTTATAACGG
6[48]	GGATAAGTGCCGTCGATTGCTCAGTACCATCGTTAAATAAGA
9[17]	GAAAGTATTAAGAACCTACATACATTTCATTTAAATACCGACCGTG
11[42]	TAATACAAAGTTACAATTACTAGAAACACTGAATAAGTCCTG
10[41]	TAACGGGGTCAGTGCCTTGAGTGCCTATGCTCAACAGTAGGGCTTAA

150, Strut I, right (red)

Start	Sequence
2[279]	ACAGGAGAATGGATCCCCGGGTTTATGGCTCGCGGAGTGAATAGCGGAG
7[252]	CTCATTCGGATTTATAGATGATTAAACCCAATATT
6[258]	TGAGAATAGAAAGGAAAGCTG

```
6[277]   TTCAACAGTTTCAAGGCTTGCCCTGACG
8[251]   AACAAAAAGGCTGGTTTGCGGGATCGTCACCCTCATCAACGT
8[280]   AACCGGATATTCATTACCCAAAGCAGCGAAAGACAGCATCGGAA


150, Strut II, left (green)
Start    Sequence
15[14]   TACATTGCAAGGTACGTTTAGCTGAAAC
15[63]   ATACATTTGGATGAACGGGAAAGTTTCTTTACATA
14[41]   AACATTGCTGATACGGATCGGGTTGAGTGATATTGGTTTTGA
16[34]   CAAACGAATAAGTCCCGGTATTCTAAGAACGCGAG
17[7]    CGTCGTCTTCACAGTGTTGAGCTTGAAA
17[35]   GTAGTGTCAGATAACTCTCAGGCACTGCCGAAGTGACCAGCA
18[48]   TATAGAAGGCTTATCTTAGCAAGCAAATTTGATGACCGTACT
21[17]   CGAGAACAAGCTAAACCAACAATAGAACTGCGCGATGCCAGAGTCT
23[42]   CCATCTAGAACGAGATTATCTTACTGAAAGCGAAACAAGTAA
22[41]   TTACGAGCATGTAGAAACCAAAGAACGGAGAGTTTATAAATGAGTATC


150, Strut II, right (orange)
Start    Sequence
14[279]  CCAATACTGCGGAATCGTCATGTAATAGCCAAAATAGAACCGTCAGAGG
19[252]  CACCCTCAGCGAGACACTATCATAACCCTCGTTTA
18[258]  GTAATTGAGCGCTAGAGCCGC
18[279]  CACCCTGAACAAAGCCACCCTCAGAGCCAC
20[251]  TCAGAAACAATGAGGAAAATACATACATAAAGGTGGCCTCCC
20[279]  ACCAGAGCCACCACCGGAACCGCAACATATAAAAGAAACGCA


140, Strut I, left (turquoise)
Start    Sequence
3[14]    GCTCAACAGTAGGATACCAGTATAAAGC
3[63]    ATTCGTTTTTACATCGGGAGAAAAGTATCATATGC
2[41]    GTTATACAAATTCTATATAATTACTAGAAAAATCGGGTTTAG
4[34]    GAATCTAGGCTTTTGAGAGGGTTGATATAAGTATA
5[7]     TTTGAAATACCGACCAATTACCTGAGCA
5[35]    GGCGTTAAATAAGGAAGGGTTAGAACCTTATACTTATAACGG
6[48]    GGATAAGTGCCGTCGATTGCTCAGTACCATGAATAAACACCG
9[17]    GAAAGTATTAAGAACCTACATACATTTCATTTCGTGTGATAAATAA
11[42]   TAATACAAAGTTACAAAAGCCTGTTTCACTGAATAAGTCCTG
10[41]   TAACGGGGTCAGTGCCTTGAGTGCCTATGCGGCTTAATTGAGAATCG
```

 DOI: 10.1038/NNANO.2010.107

140, Strut I, right (red)

Start	Sequence
2[279]	ACAGGAGAATGGATCCCCGGGTTTATGGCTCGCGGGCTTGCCAGCGGAG
7[252]	GAATAAGGGATTTATAGATGATTAAACCCAATATT
6[258]	TGAGAATAGAAAGGAATCAGT
6[277]	TTCAACAGTTTCCTGACGAGAAACACCA
8[251]	CTCATAAAGGCTGGTTTGCGGGATCGTCACCCTCAAAAGCTG
8[280]	TCATTACCCAAATCAACGTAACGCAGCGAAAGACAGCATCGGAA

140, Strut II, left (green)

Start	Sequence
15[14]	GGAGTTTATAAATAAAACGACATACATT
15[63]	ATACATTTGGATGAACGGGAAAGTAAACATTGCTG
14[41]	ATACCGTTTAGCTGGGGTATTATCTTACGATATTGGTTTTGA
16[34]	GTTGAGAATAAGTCCCGGTATTCTAAGAACGCGAG
17[7]	ACAGCGATGCCAGATGTTGAGCTTGAAA
17[35]	ATGATGACCGTAAACTCTCAGGCACTGCCGAAGTGACCAGCA
18[48]	TATAGAAGGCTTATCTTAGCAAGCAAATTTCTCAAACATCGG
21[17]	CGAGAACAAGCTAAACCAACAATAGAACTGCGGTCTGTAGTGTCAG
23[42]	CCATCTAGAACGAGTGTTTCTTTACAAAAGCGAAACAAGTAA
22[41]	TTACGAGCATGTAGAAACCAAAGAACGGAGTGAGTATCAATGAGTTAG

140, Strut II, right (orange)

Start	Sequence
14[279]	CCAATACTGCGGAATCGTCATGTAATAGCCAAAATCCCTCAGTCAGAGG
19[252]	ACCGCCAAGCGAGACACTATCATAACCCTCGTTTA
18[258]	GTAATTGAGCGCTAGATCAGA
18[279]	CACCCTGAACAAAGAGCCACCACCCTCAGA
20[251]	CACCCAACAATGAGGAAAATACATACATAAAGGTGGAGCCGC
20[279]	CCACCGGAACCGCCTCCCTCAGCAACATATAAAAGAAACGCA

For the asymmetric Kite in Fig. 2d we used the turquoise, red, and green staples for the 320-Kite and the orange staples for the 140-kite

Twelve-helix-bundle kite exhibiting enzymatically activated rearrangement (p7848):

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Strut I (grey)

Start	Sequence
0[62]	ATCAAAATCTGGTCAGACTCTGAATACCCATCAAGCCAAATC
0[104]	AGACCAGTATTAAATGCTGTATTAATCAACCATCGACTTGCA
0[146]	ACCGATATTATAGCAATTTCAAGCGACTTGTATCAGTAACCG
0[188]	GGTTGATGTGAGTTCGACTGGAATGATGGTCACCAAGCGACA
0[230]	CACCATTCTCCAATGGATGGTAGCGAAGGTTTATTGTCGGAACCGCCTC
0[258]	ACACCACGGAATAAGAATAAGAATTACC
1[14]	ATGACGTAATGACAGAGGAAAGACTTCAGCATTACAGGTAGAAGTAGTA
1[49]	AATAATTAGATTAAATCAGTTGAAAAACGAACTAACAAAAAATGTACCT
1[84]	TAAACACGGCTCTGGCGCATAGGAACGAAAACTATCATAACC
1[126]	GCAACATGCTCTGCGTTGCGCCCCAATAACGTAATGCCACTA
1[168]	ATATGGTGTTGTGTATAAGTAGACAGGATTCATAGTTAGCGT
1[210]	TCAGGAAGGATGGCACCATTATTTAGCGGGAGTCTCTGAATT
3[14]	TGTTTTAAATATTATGGTGCTGTAGCTC
3[63]	AGCGGTACCCTGACTATTATAGTATGGCTTAGAGCTTAATTG
3[105]	AACGGCAGACCAACTTTGAAAGAACCATAAATCAA
3[147]	ACAGCGTCTTGCTTTCGAGGTGAACGGTCAATCAT
3[189]	CCGTCGATTGCTCAGTACCAGGCAGCCTTTAATTG
3[217]	CCTCACCCATATGGTCCAAGGCCGCCTGCATTTTCTCAGACTCTCAGAG
3[231]	TCACCGTCATTTGGGAATTAGAGAGAGAAGGATTA
2[34]	CTGAATCTCTTTGATAAGAGGCCCGAAAAACTTCACCAGATT
2[83]	AAATCAGGTCTTTAATTAAACAGTTCAGTGACCTTGACTCAA
2[125]	AAGGGAACCGAACTCGTTACTTAGCCGGGACAACATGCTGGC
2[167]	TATCGGTTTATCAGACTCCAAAAAAAAAGAATAGGTAAATGC
2[209]	GGATTAGCGGGGTTAAGTATTAAGAGGCCGGAAACGAAATGG
2[258]	ATCACCGTCACCGACTTGAGCCATGACGGAAATTATTCATTA
4[41]	TTAATTGCTCCTGCCAGATGTTGGAAAGCATCAATAGAAATT
4[76]	TGCTTCTTGACAAGGCGGAATCGTCATAAATATTC
4[118]	CCATGCATAACCCACATCGCCTGATAAATTGTGTC
4[160]	AAATCTCAGGAGCAAACTAAAGGAATTGCGAATAA
4[202]	TGAAACCATCGATGTGCCCCCTGCCTATTTCGGAA
4[251]	GAAGGTAAATATCATTTTACCATATTTGATTCAGATGATATGACTATAT
5[7]	CCAGACCGGAAGCATTCGAGCTTCAAAG
5[35]	AGGATTAGAGAGGATAGCGTCCAATACTTAAAATGGAAGCAA
5[84]	ATTGACAACGGAGATTTGTATAGCGCGAACAGATG
5[126]	GAAATGAGAATAGAAAGGAACACAGTTTTTCTTAA
5[168]	TAATTCCGTATAAACAGTTAACCTTGAGATAAGTG
5[210]	CCTATTACCAGCGCTAAAGACGAAAATTAGCAAAA
7[9]	TTATCTGTGAGGAACTGGCTC
7[56]	GGGGGTATAATGCAGAGATTTCCTGACGAGAACAC
7[70]	CGGATATGAGAGGCTTTTGCAAAAGAAGTTTTGCATCATTGA

DOI: 10.1038/NNANO.2010.107

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7[98]   CGATTATGAGGACTGGGTAGCGCAGCGAAAGACAGCACTGCT
7[112]  ATTCGGTATACACTAAAACACTCATCTTTGACCTA
7[140]  AACAACTTTTCGTCGGAACCCATTTTCAGGGATAGCACCGCT
7[154]  GTACCGCGTAAATGAATTTTCTGTATGGGGTTTCG
7[182]  CGGGGTCCTTGATAGGTTGAGAGAGCCGCCGCCAGCACCGCC
7[196]  GCACCGTGATACAGGAGTGTACTGGTAATAAGTGT
6[41]   TTACGACCAAACATCGGAACAACATTGACGTTGGGAAGAAAA
6[90]   AAAACCAAAATAGCTCTTACCAGACGACTAATCCCCCTCAAA
6[132]  AAAGAGGCGAAAGACGGCACCAACCTAAGTCCGCGACCTGCT
6[174]  CTTTCCAGACGTTACATCTAAAGTTTTGGCTTTTCACGTTGA
6[216]  ACATGGCTTTTGATAATTCCAGTAAGCGTTTATTCTGAAACA
6[258]  TCGATACATCAGGAGCATACCAATAACG
8[83]   CTCGTATTACCCACGAATTACGAGGCATAGTAAGA
8[125]  CGAAGCTGAGGCAGAAGTTTCCATTAAACGGGTAA
8[167]  AACGACCCTCAGAAGCCTGTAGCATTCCACAGACA
8[209]  TACCGTCAGTAGACTTCATTAAAGCCAGAATGGAAAGCGCTCATAGCCC
8[258]  CCGGAACCAGAGCCACCACTTAGCGTTTGCCATCTTTTCATA
9[17]   ACCAGTCAGGATTTTAAGATATGAAGTTTTAAAACTCCAACAGGTC
9[42]   ATCTACGTTAATTACATAACGCCAAAAGATTCAACATAGAAC
9[91]   GCAACAGACTTTTTCATGAGGAGGCTTTACGATAT
9[133]  AATACCAGTACAAACTACAACCACTGAGTTGTTTA
9[175]  ACCCTCACAAACGAATGGATCGATTGGCAGTAGCA
9[231]  CCTTATTTCATCGGAGTGCGGATCAATAAAAAGGGCGACATTCAACCGA
11[7]   AATCATTGTGAATTTGGTTTAATTTCAA
11[77]  AACGTAACAAAGTCGGCTGGCAAAACGAGAATGGGAACAAAGGACCCAG
11[119] GGGAGTTAAAGGAGCGACAATAACGAGGCGCAGATCAGCGGAAATGCTA
11[161] CCACCCTCAGAATTTAGCCCGGGCTCCAAAAGGGGTAACAGTTCTTTAA
11[203] GAATCAAGCCGCCACCAGAACCACCACCGCAGGTCATGAGAG
10[34]  AATTGGGCTTGAGAACCTTATAAGCAACTAAAGTACGGTG
10[48]  CAGAACGAAGATTCGAGGAAGTCATTTTTGCGGCATTTAGACTACCAGA
10[83]  CATTCAGTGAATAAGGCTTGCAGGAATAAGATTGC
10[125] TTTGCGGGATCGTCACCCTCAAACGGCTCCTGTAC
10[167] ACCCTCAGAGCCACCACCCTCATGTACCCCTTGAT
10[223] CCACCACCCTCAGAGTTTGCCGCAAGGCTGAGACT
10[251] GCCACCCTCAGAACCGCCACCGTAGCGCTTAGTAG

Strut II (black)
Start   Sequence
12[62]  AGCCGTTGATAATCAGAAAAGCCCCAAAGGTCTGAGCTTATA
12[104] AGTCAATAATATTTAAATTGTAAACGTTTTTGGATACCATAT
12[146] TGGCAATTTAAATTTTTGTTAAATCAGCCCATTAACCAGAGG
12[188] TGCGCGACGCCATCAAAAATAATTCGCGGAAAGGAACCTGGC
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12[230] TGACGGGTTTCATCAACATTAAATGTGATGATTGCCCGCGGGAGCTAAA
12[258] AGACGGGCAACAGCGCGAGTAACAACCC
13[14]  GGTAATCGTAAAACTAGCATGATTACCGACACAAATTCTTACTTTCAAA
13[49]  CCCGGTTTTTATTTAAGCCAAATCCTGTTTAGTATATATTTTATTCCCA
13[84]  AGATTGTATAAGCAAGTGAATACGTCAGGGAGCCAGTAATAA
13[126] TGTTAAAATTCGCGTCATCAAAATGAAAATTACAAAATCGCG
13[168] TTAACCAATAGGAAACTGATAGTCTGTCCTAGAAAGGAATTG
13[210] TTCCTGTAGCCAGCGAAAGCCCGCTGCGCGACTATCGGCCTT
15[14]  GAAGCGCATTAGCCGAATAACATAAAAA
15[63]  AGAACGAATTAAACCAAGTACCGAATGAAAATAGCAGCCTTT
15[105] CGCTGTAAACATAGCGATAGCTTCTTTCCTTATCA
15[147] TATCAATGCGGAATTATCATCATATTAATTTTCCC
15[189] TAGTCGGACAGACAATATTTTTGGCGGAACAAAGA
15[217] CTTCTGAGAGTTGCCAATTCAGGCTGCGAATGCGCCGTAACCAACGGTA
15[231] ATTTATTATCGGAACCCTAAAGGGACCTGAAAGCG
14[34]  ACAGAGACAAACGATTTTTTGAGGAATCTCAATCATATGTAC
14[83]  TTCCAAGAACGGGTCTAGAAACCAATCAAATCATAAACAGGA
14[125] TTAGAATCCTTGAACTTGCTTCTGTAAACTGATTGAATATTT
14[167] AACCACCAGAAGGAACAAGTTTGAGTAAAACATCGTCATTTT
14[209] TAAGAATACGTGGCAAGGCCAACAGAGAGTGGCGATCTGGCC
14[258] CGAGGTGCCGTAAAGCACTAACAACCATCACCCAAATCAAGT
16[41]  ATCCAAATAAGAATTTTAGAAATGTGTAGGTAAAGATTCAAA
16[76]  CATGTACCTTTTCACTGAACAAGAAAAATAATATC
16[118] AACCTTCTGAATTAAATGGAAACAGTACATAAATC
16[160] TTTAACGAACGAGGACAACTCGTATTAAATCCTTT
16[202] ATTCTGAAAGCGACGCAGATTCACCAGTCACACGA
16[251] CCCACTACGTGACCTGGGAAGGGAAACCAGGCAAAGCGCCATTCGCCAT
17[7]   CCTAATTTGCCAGTAAATCAGATATAGA
17[35]  CCATATTATTTACAACAATAGATAAGTCGAACGCGCTCATCG
17[84]  CCATCTTGAATTACCTTTTTTCATTTAAATTAAGA
17[126] AATATCTTTACAAACAATTCGATTTAGATCCTGAT
17[168] GCCCGTGGATTATTTACATTGGCTCAATTGGCTAT
17[210] CCAGTCAAGCGGTCCACGCTGCCTGAGAGCCCCCG
19[9]   CAACGCAAGGATAATAAGGCG
19[56]  CAGCTAAAATCGCCCGCTCAAACAAAGAACGCGAG
19[70]  TCCGGCTCTGTCCAGACGACGACAATAAACAACATGCAATGC
19[98]  AAAATTATACATCGATGAATACGTAGATTTTCAGGTTAATGC
19[112] AAGGAATAAGAAGATGATGAAACAAACATCAAGAA
19[140] TACATTTCTCAAATAATCTAACGCTGAGAGCCAGCAGCACGT
19[154] CAGCAGACAACTAATAGATTAGAGCCGTCAATATC
19[182] TACATTTAATACTTCATCACGAGGCCACCGAGTAAAATATTA
19[196] AGCGGGCTTGCAACAGGAAAAACGCTCATGGAATC
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DOI: 10.1038/NNANO.2010.107

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18[41]   CTGAGTACCCTCATCATATGCGTTATCGACCGGAATCATAAT
18[90]   AAGGTAAAGTAATTTATATAAAGTACCGATCTAATTTACGAG
18[132]  AATTACCTGAGCAATGGCGAATTATTCAGAATGTGAGTGAAT
18[174]  TTTAGGTGCACTAAAGGGTTATCTAAAAAAAACGTTATTAAT
18[216]  ATTACCGCCAGCCAGCTAATATCCAGAAAGAATAAAAGGGAC
18[258]  CCGCTTCTGGTGCCGGCGATCGGTGCGG
20[83]   GAGAAGGTTGGGTTATGTAATTTAGGCAGAGGCAT
20[125]  CAGAGAACCAACAGTCGCCTGATTGCTTTGAATAC
20[167]  AGGAAATAAAACTTATCTGGTCAGTTGGCAAATCA
20[209]  GCTGGTAGGGCGCGTCACTTGCCTGAGTAGAAGAACTCAACTACAGGGC
20[258]  TTTCCTCGTTGGAATCAGAGCATGGTTGCTTTGACGAGCACG
21[17]   TAAGAATAAACTGTGATAAAAAATTAGCAAGCTACAAAATAAACAG
21[42]   TACTAGAAAAAGATTTAACAACGCCAACAATTGAGTGTAACC
21[91]   TTTCGAGAAACAATAACGGATTACCTTTATTATGG
21[133]  CAAGTCAAACCCTCAATCAATGCTGAACGAACCAC
21[175]  ACAGTTTGATTAGTAATAACATTGTAGCTGAAAGG
21[231]  GCGTACTCGCGCTTCAACTGTGCCTGGCGTTTGCCCCAGCAGGCGAAAA
23[7]    ATTTAATGGTTTGATTTCATCTTCTGAC
23[77]   TAACTATATGTATATTATCAAATAATCGGCTGTAGCAATTTCACAAAAC
23[119]  CAAAATTATTAGCATATAATCTCGTCGCTATTAATAGTATTATTGATAA
23[161]  TGAGGCGGTCAGGAGCCCTAACATTATCATTTTAACGTCTGATAATACC
23[203]  AAGTGTAGAAGTGTTTTTATAATCAGTGCAAATTAAGTTTAA
22[34]   TATATTTTAGTTAAAATACCGCGACGGGAGAATTAACTGAA
22[48]   AAAACTTCAGTATATCATCGTTTTAACGTCAAACACCTGTTTAAATGTT
22[83]   TGATGCAAATCCAATCGCAAGCAGTAGGGAAAGCA
22[125]  AAAACAGAAATAAAGAAATTGTACAGTATAAGAAG
22[167]  ACACCGCCTGCAACAGTGCCAAGCATCAAAGATGA
22[223]  CGCCAGAATCTTGAGCGGTCAGGCGAACTAGAACC
22[251]  ATTAAAGGGATTTTAGACAGGACCACACCCGAGCT

Complement to EcorI site:
TCTAGAGGATCCCCGGGTACCGAGCTCGAATTCGTAATCATGGT


Six-helix-bundle kite (Three 273-nt-long and one 2204-nt-long spring):

Left and right End staples (blue)
Start    Sequence
0[41]    AACAGGAGGCCGATTAAAGGGATTTT
0[393]   GAAGATTGTATAAGCAAATATTTAAATTGT
1[16]    AGACAGGAACGGTAGCACGTATAACG
1[364]   CGTTGATAATCAGAAAAGCCCCAAAAACAG
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2[41]   TTGCTTTGACGACGCCAGAATCCTGAGAAG
2[389]  GCATGTCAATCATATGTACCCCGGCA
3[12]   TGTTTTTATAATCACCGCCGCGCTTAATGC
3[364]  ATCGATGAACGGTAATCGTAAAACTA
4[41]   CGCGTAACCACCACACGTGAGGC
4[396]  TCAGGTCATTGCCTGAGAGTCTGGAGCAAACAA
5[19]   GAACCGGATATTCATTACCCAAA
5[364]  CTCGTTTACCAGACGACGATAAAAACCAAAATA
6[41]   TGAGGACTAAAGACTTTTTCATGAGG
6[393]  ACAAGAATTGAGTTAAGCCCAATAATAAGA
7[16]   AAGTTTCCATTAAAGAAAGACAGCAT
7[364]  GCTTGAGCGCTAATATCAGAGAGATAACCC
8[41]   ACCCTCAGCAGCCGGGTAAAATACGTAATG
8[389]  ACCCTGAACAAAGTCAGAGGGTAATA
9[12]   CCACTACGAAGGCAAGGCTTGCAGGGAGTT
9[364]  GCATTAGACGGGAGAATTAACTGAAC
10[41]  ATATATTCGGTCGCTGCCAACCT
10[396] AGCCTTTACAGAGAGAATAACATAAAAACAGGG
11[19]  ACCAGACCGGAAGCAAACTCCAA
11[364] CAAGGCAAAGAATTAGCAAAATTAAGCAATAAA

Core Strut I and II (red)
Start   Sequence
0[55]   CAGAGCGAACAAAGTAGCGGTCACGCTGGCCGCTACAGGGAG
0[97]   GAGCCCCAAACACCTCAAAGGGCGAAAAACCATCACCCAAAC
0[139]  CAAAATCTTTCAACGGCAACAGCTGATTGCAAGCGGTCCATG
0[181]  CCTGTCGAACTGGCTTCCACACAACATATGCCTAATGAGTTG
0[223]  TGTTACCTACGTTAGCACGAATATAGGGCATTTCTCCGAAGC
0[265]  CCAAAATAGAAAGACCAAGCTTTCTCAGTGTGAATTCATGAC
0[307]  ATTACGCTAATGCAACTCCAGCCAGCTTAAAGCGCCATTCGA
0[349]  CGTAATGAAGAGCACGCCATCAAAAATAATCAACATTAAATC
1[70]   GACCGTAAAGCACTGAGCTTGACGGGGAAATAAGGATCAGGG
1[112]  CCAATCCTGTTTGAAATCAAAAGAATAGATTGGGCACCGCCT
1[154]  TTGCGCTCACTGCCTGCATTAATGAATCATTACCTGAAGCAT
1[196]  TCGAGTAAACAGGGAGACGGAGGATCCCAGGACGTATCGGCT
1[238]  GACTGAATTGTCAACTTCTAATCTATTTCGGAACACAGGGTG
1[280]  ACGGAAGGGCGATCCGAAAGGGGGATGTTTTAGGACCGCTTC
1[322]  TGATTCTCCGTGGGTCACGTTGGTGTAGAAAGGAATCTGGCC
2[83]   GGGGTCGAGGTGAGGGCCCACTACGTGAACCGTCTCTTGCCC
2[125]  CCAGCAGGCGAAAGCTGAGAGAGTTGCAGCCCTTCTTGAGAT
2[167]  ATTAATTGCGTTGCTGTAAAGCCTGGGGCGAGCCGTATGCGA
2[209]  GGTTGGTGTAATATCATTTCACATAAATGCCTTGATGGGAAG
```

DOI: 10.1038/NNANO.2010.107

sequences_all.txt 2009-09-01

```
2[251]  GTGTCCTTAGTGTATTCTTCTAAGTGGTGAGAAGCACATTAT
2[293]  GCGCAACTGTTGGCGCCGGAAACCAGGCTCCGGCAATACCAC
2[335]  ACAACCCGTCGGCCTGTAGCCAGCTTTCATTCGCGTTACGAG
3[56]   CGGGCGCTAGGGATGGAAGAAAGCGAAAGAGTGGCGAGAAAG
3[98]   TATTAAAGAACGCCTTTGGAACAAGAGTAATTGAGTGTTGTT
3[140]  GTTTTTCTTTTCAGGTATTGGGCGCCAGTCGGGAGAGGCGGT
3[182]  TGTGAAATTGTTCGGGTCATAGCTGTTTGATCGAATTCGTAA
3[224]  CATCTGTAAGCATGCCGACAGTGCGGCCTGGAGTGACTCTAT
3[266]  GACGTTGTAAAAGTCAGGGTTTTCCCAGCCTTAAGTTGGGTA
3[308]  CAGTATCGGCCTCCAGTTTGAGGGGACGCGTAACCGTGCATC
3[350]  AGCTCATTTTTTGATTAAATTTTTGTTATGTTTGTTAAAATT
4[69]   CGCGCTGGCAAGTGCTGCTCATTCAGTGAAGCCGGCGAACAT
4[111]  GGTGGACTCCAACGAGAACGAGTAGTAACCCGAGATAGGGGG
4[153]  AAACCAGTGAGACGTTTAATCATTGTGAGGCCAACGCGCGGG
4[195]  GAATCCGCTCACAATCATTATACCAGTCCGGGTACCGAGCAA
4[237]  GAACTCGTCGGTGGATAAAACGAACTAAACGCTCGCCCTGCT
4[279]  TGCGACGGCCAGTGTTCATCAGTTGAGAGCTGCAAGGCGACG
4[321]  TTCAGGAAGATCGCGATACATAACGCCAATGGGCGCATCGCT
4[363]  GAAACCAATAGGAAACACTATCATAACCAAACGTTAATATAC
5[42]   TCAACGTGGAGCTATGCTTTCCTCGTTAGGCGCGTACTATGG
5[84]   TGACGAGCGATTTAAAATCGGAACCCTACCATCAAGTTTTTT
5[126]  GGTTTAACCTTATATGGTGGTTCCGAAAGGCGCTGGTTTGCC
5[168]  TTTTAAGTGCCAGCCGCTTTCCAGTCGGCCGAGCTAACTCAC
5[210]  AAAAATCTCGATAACTTAAGCTACGTGGCTCTCTGACCTCCT
5[252]  TACAGGTAACCCCGCCTTATGACAATGTTCCGCACGACTTAA
5[294]  ATTCAACCAGCTGGGGTGCGGGCCTCTTACGCCATTCAGGCT
5[336]  GCATAGTGGATAGGAACAAACGGCGGATAATGTGAGCGAGTA
6[55]   GGCTACAGGATTAGCCCACGCATAACCGAAAGGCCGCTTTTG
6[97]   GGAGCCTATTTTTGTGCTAAACAACTTTACAACTAAAGGAGT
6[139]  CCTGTAGTGTAGCTACCCTCAGAACCGCATAGCAAGCCCATT
6[181]  GGCGGATCTGGAAGAGTTAATGCCCCCTAAAGTATTAAGACC
6[223]  TTCCAGTGAACGAGGCCGCCAGCATTGATGATATTCACAACC
6[265]  CCACCACTGGTCAAATCAAGTTTGCCTTTTTTCGGTCATAGC
6[307]  GAGCCAGGCTGAAAAAAGACAAAAGGGCTATTGACGGAAAGA
6[349]  TACATAAACATCCAACAAAGTTACCAGAACCCAAAAGAACTT
7[70]   AATTGAAAATCTCCTATCGGTTTATCAGTGCTCCTTTCAGCG
7[112]  TGTGAGTTTCGTCACAGACAGCCCTCATCTTAATTAGAGCCA
7[154]  TATTAGGATTAGCGGTCGAGAGGGTTGATATGCAATCGGAAC
7[196]  AAGAATGGAAAGCGATACATGGCTTTTGACAGTTGTTGAGGC
7[238]  CATTTTCATAATCAGCCTCCCTCAGAGCCCATTAGAGACTGT
7[280]  CACCGTCACCGACTACCAGTAGCACCATATATTTTAACCGAT
7[322]  TTCGCAGTATGTTAAACATATAAAAGAACTACTAACGAGGAA
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8[83]    AATTTTTTCACGCAGAGAATAGAAAGGACAACAGTTTTGATA
8[125]   GTACCGTAACACTCCCTCATTTTCAGGGCACCCTCGCTGAAT
8[167]   TCAAGAGAAGGATCTATTCTGAAACATGGCCTATTCTAAAGT
8[209]   TCATTAAAGCCAGTCAGACGATTGGCCTCAGGAGGATTCCCA
8[251]   GCGTTTGCCATCGACGTTTTCATCGGCATAGCGTCATACATT
8[293]   GGTGAATTATCACCGGAGGGAAGGTAAAGACATTCCATTTGG
8[335]   GACTCCTTATTAATAATAATAACGGAATAGGAAACTAGTAGT
9[56]    CGCCGACAATGAGTGCTTGATACCGATACAGTGAATTTCTTA
9[98]    AAATGAATTTTCACGTCTTTCCAGACGTAAGATCTAAAGTTT
9[140]   AGTACCGCCACCATACCGTACTCAGGAGAACCGGAATAGGTG
9[182]   TTGAGTAACAGTGTTTTAACGGGGTCAGACTGTACTGGTAAT
9[224]   GCCACCAGAACCCGGCCACCACCCTCAGACAACCGCCACCCT
9[266]   AGCACCGTAATCAGAATGAAACCATCGAAGGGCCGGAAACGT
9[308]   AAATTCATATGGGCTTTGTCACAATCAAATCACGGAATAAGT
9[350]   TAAGAAAAGTAAGCTCTTACCGAAGCCCTAGAAATAGCAATA
10[69]   GACAACAACCATCGAGAGTACCTTTAATCTTGCTTTCGAGAC
10[111]  CCTGTATGGGATTTCGGATGGCTTAGAGAGTTAGCGTAACAA
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10[195]  AGGCCCGTATAAACTTTCATTCCATATAATGATACAGGAGCA
10[237]  AGACCACCAGAGCCTAGATTTAGTTTGACGCCACCCTCAGCG
10[279]  TGAGTAGCGACAGATAACCTGTTTAGCTTACCATTAGCAAAG
10[321]  ACTTTACCAGCGCCAGGTGGCATCAATTACGCAAAGACACTA
10[363]  AAGCAGATAGCCGAATAAATCATACAGGGCAAGAAACAATCA
11[42]   CAGGTCAGAGGCTTCGGAACGAGGGTAGGTTGCGGGATCGTC
11[84]   AGAGGTCTTAATTGAAAAAAAAGGCTCCTAATTGCGAATAAT
11[126]  ATAATGCCATTCCACCAGTACAAACTACGTATAGGAACCCAT
11[168]  ACGGTGTAAGTGCCGGGTTTTGCTCAGTTGGGCTGAGACTCC
11[210]  ATTCTGCAAGCGTCCAGTCTCTGAATTTAGACAAATAAATCC
11[252]  TCGCAAACGGAACCAAATCACCGGAACCTAGCCCCCTTATTA
11[294]  GGCGCGACAAAATCTGAGCCATTTGGGATATTATTCATTAAA
11[336]  AGCATTAAGGTGGCGCAAACGTAGAAAATTTGGCATGATTAA


Six-helix-bundle kite with four clamps (p7560):

Left and right End staples (blue)
Start    Sequence
0[41]    AACAGGAGGCCGATTAAAGGGATTTT
0[393]   GAAGATTGTATAAGCAAATATTTAAATTGT
1[16]    AGACAGGAACGGTAGCACGTATAACG
1[364]   CGTTGATAATCAGAAAAGCCCCAAAAACAG
2[41]    TTGCTTTGACGACGCCAGAATCCTGAGAAG
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2[389]   GCATGTCAATCATATGTACCCCGGCA
3[12]    TGTTTTTATAATCACCGCCGCGCTTAATGC
3[364]   ATCGATGAACGGTAATCGTAAAACTA
4[41]    CGCGTAACCACCACACGTGAGGC
4[396]   TCAGGTCATTGCCTGAGAGTCTGGAGCAAACAA
5[19]    TTGATATAAGTATAGCCCGGAAT
5[364]   GCGAATAATAATTTTTTCACGTTGAAAATCTCC
6[41]    CGCAAAGACACCACGGAATAAGTTTA
6[393]   ACCTACCATATCAAAATTATTTGCACGTAA
7[16]    TTTTGTCACAATCAAACGTAGAAAAT
7[364]   ATTATACTTCTGAATAATGGAAGGGTTAGA
8[41]    AGTATGTTAGCAATAGAAAATTCATATGGT
8[389]   CAATATAATCCTGATTGTTTGGATTT
9[12]    TTACCAGCGCCAAATACCCAAAAGAACTGG
9[364]   CTGATTATCAGATGATGGCAATTCAT
10[41]   CGCAATAATAACGGAAGACAAAA
10[396]  AGAAACCACCAGAAGGAGCGGAATTATCATCAT
11[19]   CATTATACCAGTCAGGACGTTGG
11[364]  AAAACGAGAATGACCATAAATCAAAAATCAGGT

Core Strut I and II (red)
Start    Sequence
0[55]    CAGAGCGTCACCGTTAGCGGTCACGCTGGCCGCTACAGGGAG
0[97]    GAGCCCCCCACCCTTCAAAGGGCGAAAAACCATCACCCAAAC
0[139]   CAAAATCTCAGGGAGGCAACAGCTGATTGCAAGCGGTCCATG
0[181]   CCTGTCGTGAGTTTTTCCACACAACATATGCCTAATGAGTTG
0[223]   TGTTACCCACAGACGCACGAATATAGGGCATTTCTCCGAAGC
0[265]   CCAAAATTCGTCTTCCAAGCTTTCTCAGTGTGAATTCATGAC
0[307]   ATTACGCTTTGCTAACTCCAGCCAGCTTAAAGCGCCATTCGA
0[349]   CGTAATGAAAGGAACGCCATCAAAAATAATCAACATTAAATC
1[70]    GACCGTAAAGCACTGAGCTTGACGGGGAGTACCGCATCAGGG
1[112]   CCAATCCTGTTTGAAATCAAAAGAATAGTCAGAGCACCGCCT
1[154]   TTGCGCTCACTGCCTGCATTAATGAATCGGAACCCGAAGCAT
1[196]   TCGAGTAAACAGGGAGACGGAGGATCCCACTACAAATCGGCT
1[238]   GACTGAATTGTCAACTTCTAATCTATTTGCGTAACCAGGGTG
1[280]   ACGGAAGGGCGATCCGAAAGGGGGATGTAATGAATCCGCTTC
1[322]   TGATTCTCCGTGGGTCACGTTGGTGTAGGTTTCAGTCTGGCC
2[83]    GGGGTCGAGGTGAGGGCCCACTACGTGAACCGTCTCACCCTC
2[125]   CCAGCAGGCGAAAGCTGAGAGAGTTGCAGCCCTTCCACCACC
2[167]   ATTAATTGCGTTGCTGTAAAGCCTGGGGCGAGCCGATGTACC
2[209]   GGTTGGTGTAATATCATTTCACATAAATGCCTTGACGCCTGT
2[251]   GTGTCCTTAGTGTATTCTTCTAAGTGGTGAGAAGCGATCTAA
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2[293]  GCGCAACTGTTGGCGCCGGAAACCAGGCTCCGGCATTTCTGT
2[335]  ACAACCCGTCGGCCTGTAGCCAGCTTTCATTCGCGCGGAGTG
3[56]   CGGGCGCTAGGGATGGAAGAAAGCGAAAGAGTGGCGAGAAAG
3[98]   TATTAAAGAACGCCTTTGGAACAAGAGTAATTGAGTGTTGTT
3[140]  GTTTTTCTTTTCAGGTATTGGGCGCCAGTCGGGAGAGGCGGT
3[182]  TGTGAAATTGTTCGGGTCATAGCTGTTTGATCGAATTCGTAA
3[224]  CATCTGTAAGCATGCCGACAGTGCGGCCTGGAGTGACTCTAT
3[266]  GACGTTGTAAAAGTCAGGGTTTTCCCAGCCTTAAGTTGGGTA
3[308]  CAGTATCGGCCTCCAGTTTGAGGGGACGCGTAACCGTGCATC
3[350]  AGCTCATTTTTTGATTAAATTTTTGTTATGTTTGTTAAAATT
4[69]   CGCGCTGGCAAGTGACTCAGGAGGTTTAAAGCCGGCGAACAT
4[111]  GGTGGACTCCAACGCAGAACCGCCACCCCCCGAGATAGGGGG
4[153]  AAACCAGTGAGACGTAGCAAGCCCAATAGGCCAACGCGCGGG
4[195]  GAATCCGCTCACAACGTCACCAGTACAACGGGTACCGAGCAA
4[237]  GAACTCGTCGGTGGAGCCCTCATAGTTAACGCTCGCCCTGCT
4[279]  TGCGACGGCCAGTGTCCAGACGTTAGTAGCTGCAAGGCGACG
4[321]  TTCAGGAAGATCGCAACAACTTTCAACAATGGGCGCATCGCT
4[363]  GAAACCAATAGGAACAACTAAAGGAATTAAACGTTAATATAC
5[42]   AGGTGTAGGAGCTATGCTTTCCTCGTTAGGCGCGTACTATGG
5[84]   AGAACCGCGATTTAAAATCGGAACCCTACCATCAAGTTTTTT
5[126]  CTCATTTCCTTATATGGTGGTTCCGAAAGGCGCTGGTTTGCC
5[168]  GTAACACTGCCAGCCGCTTTCCAGTCGGCCGAGCTAACTCAC
5[210]  AGCATTCTCGATAACTTAAGCTACGTGGCTCTCTGACCTCCT
5[252]  AGTTTTGAACCCCGCCTTATGACAATGTTCCGCACGACTTAA
5[294]  ATGGGATCAGCTGGGGTGCGGGCCTCTTACGCCATTCAGGCT
5[336]  AGAATAGGGATAGGAACAAACGGCGGATAATGTGAGCGAGTA
6[55]   ACATATAAATCTACGGAAACCGAGGAAACATGATTAAGACCA
6[97]   CCCAATAAGGTAGACATAAAAACAGGGACTGAACAAAGTCAA
6[139]  ACAAAATCAACTAAGAGGTTTTGAAGCCGCTACAATTTTAGT
6[181]  GAATCATTAGTAAGATGTAGAAACCAATGAACGGGTATTAAT
6[223]  CAATAAAGATAAAAATCGCCATATTTAATTCGAGCCAGTACG
6[265]  GAATCATTGCCAGAGCGAGAAAACTTTTCCTAAATTTAATGC
6[307]  TCATAGGCCAATACACCTTGCTTCTGTATCCTTGAAAACACA
6[349]  CAAACATCAAATGCACATCGGGAGAAACAAGTTACAAAATAT
7[70]   CCAGAGAGATAACCCAAGAAACAATGAACTAACGGTAGACGG
7[112]  TGAGCGTCTTTCCACATATTATTTATCCGAGATTTAAGATTA
7[154]  GTACAAGCAAGCCGCCCAATAGCAAGCAGCCAAAACGGCTGT
7[196]  ATAAAGGTAAAGTATTCAGCTAATGCAGAACCCTCAACATGT
7[238]  TCAAATAAGGCGTTAGAAAAAGCCTGTTAGGCTTTTATTTTA
7[280]  AATGAGAAGAGTCAGACTACCTTTTTAAAATGTTTGCTATTA
7[322]  CTCAATTACCTGAGACAAAATTAATTACAAATATTGATTCGC
8[83]   AGCGCTAATATCCTATTAACTGAACACCAGCGCATAACAACA
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DOI: 10.1038/NNANO.2010.107

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8[125]   CCAACGCTAACGTTCTATTTTGCACCCATTAAATCAGGAATA
8[167]   CACTCATCGAGAATCCTTATCATTCCAACAATAATGGAATTA
8[209]   AAAGTACCGACAAATAGGCAGAGGCATTCAACGCCGTTTACC
8[251]   CGACCGTGTGATTTATTTCATCTTCTGATCAAATATGCAAAA
8[293]   AGATTAAGACGCCTATTTTCCCTTAGAAAATCGTCAGACTGG
8[335]   AATTATTCATTTTTTTGCTTTGAATACCAATAACGCATTGAA
9[56]    GATAGCCGAACAGATTTTAAGAAAAGTAGGATCTTACCGAAG
9[98]    TAGCAGCCTTTATGTAACGTCAAAAATGTAGAAACGATTTTT
9[140]   TTTAGCGAACCTTTTCTAAGAACGCGAGAGAAGGCTTATCCG
9[182]   AATATCCCATCCTTGTCCTGAACAAGAAGTTATCAACAATAG
9[224]   CTCAACAGTAGGTAACCAGTATAAAGCCACCGTTATACAAAT
9[266]   AAATCCAATCGCTAATATGTAAATGCTGACGTTGGGTTATAT
9[308]   TAAATCAATATAGATTTAATGGAAACAGAACATTTGAATTAC
9[350]   GAATATACAGTATCTCAGGTTTAACGTCGAGAAATTGCGTAG
10[69]   GAAAGTTACCAGAAGTTAATAAAACGAAATAGCAATAGCTCA
10[111]  GTCAGAGAGAATAAAAGATTCATCAGTTCAATCCAAATAAAG
10[153]  CTCCCGACTTGCGGTGCAGATACATAACAATCAGATATAGTT
10[195]  AATAATTTACGAGCAGCAACACTATCATAACGCGCCTGTTAG
10[237]  GTGCTTAATTGAGAACCAAAATAGCGAGTAGTATCATATGGA
10[279]  ATAAGACAAAGAACGGGGTAATAGTAACCTCCGGCTTAGCG
10[321]  CTTGTGAGTGAATATGCGGAATCGTCATATTTAACAATTTAA
10[363]  ATACAGTACCTTTTTTTAAACAGTTCAGAACAGAAATAAAAA
11[42]   GAAGAAAAAAGAAAACATACATAAAGGTAGTCCTTATTACGC
11[84]   TTATTACATAAGAGCACAAGAATTGAGTAAAGAGGGTAATTG
11[126]  CCACATTAAACAGCGAGCCTAATTTGCCGCTCCTGAATCTTA
11[168]  CGAGGCATACCGCGTTTTTATTTTCATCAAAACCAAGTACCG
11[210]  AGACGACCAACATGATTCTGTCCAGACGAAATAAGAGAATAT
11[252]  GAAGTTTAATTACTAAATAAGAATAAACATGGTTTGAAATAC
11[294]  ATAGCGTTCTGAGAATAGTGAATTTATCTATAGCGATAGCTT
11[336]  TCCCCCTCAAGAAACAAAAGAAGATGATAGCGCGCAGAGGCG

Clamps 1-4 (dark orange, orange, light green, green)
Start    Sequence
18[57]   GAGAAAGGCACATTATCTGTAATACTTTTGAAATTTTTAGAA
19[28]   CTTAATGTGTAGGTAGTCAAATCACCATGCTAAATAGCCTTT
20[41]   GCAATGCCTGAGGACAACGCAAGGATAACGGGAGACGGTTGT
21[12]   AGGGTAGCTATTTTTTTAAATTAATGCCGGTTCAACCATATT
22[27]   ATTGAGAGATCTACCCTCAGAGCATAAACAATATGGTTCTAG
23[42]   ACCAAAACGGAGACAAAGATTCAAAAGGCATATATTTTAAAT
24[57]   CTTTTGCGGCAGCTTGCGAGGTGAATTTCTATGACAACAACC
25[28]   CAGCTGAGGCTTGCACCCTCAGCAGCGACCTTTAACTTGATA
26[41]   ATATATTCGGTCACTAGTTGCGCCGACATAAACAGTTGTATC
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27[12]  AGGACTAAAGACTTGAGGCTACAGAGGCTTTTGAACGCATCG
28[27]  CCTTTCATGAGGAAGGCTCCAAAAGGAGAAGACAGAGGGTAG
29[42]  GGTTTATGATCGTCAGGGAGTTAAAGGCCCCACGCATAACCG
30[57]  CTATTATTCGTTCCAGCGTCATACATGGCTTTTAACGGGGTC
31[28]  TTAGTTAATGCCCCTGAAAGTATTAAGAAGCGCAGATACAGG
32[41]  GCCCGTATAAACAGTACTGGTAATAAGTTTTGATGTCTCTGA
33[12]  CTCAGTACCAGGCGTGGATTAGCGGGGTTTTTTCAAGACTCC
34[27]  AGGATAAGTGCCGTAAGCCAGAATGGAAGGCTGAGAGAAGGA
35[42]  ATTTACCTGAAACACTGCCTATTTCGGACCTTGAGTAACAGT
36[57]  ATTTAGAAGCCCTCAATATCTGGTCAGTTGTTATCTAAAATA
37[28]  CCGAGCCGTCAATACTTTACAAACAATTTGCTGAAAACAGTT
38[41]  ACTAATAGATTACGGGAATTGAGGAAGGGCAAATCCCTCAAA
39[12]  AAAGTTTGAGTAACAAAACGTTATTAATTTTTTTAAATCGTA
40[27]  GAATTATCATTTTGCTAAAGCATCACCTCGACAACTCCTTTG
41[42]  TATCAAATATTAGAGATAATACATTTGATAGGAGCACTAACA
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